The EDISON ELECTRIC INSTITUTE BULLETIN

May
1953

BRARY
953

GEOGRAPHY & INDUSTRY

EEI Convention Program

Sales Conference Summary

Today and Tomorrow
B. L. England

Rural Markets Unlimited
E. O. George

Reaching Industrial Markets
James H. Jewell

The Economic Outlook
Martin R. Gainsbrugh

Published Monthly by Edison Electric Institute

ELECTRICAL RESEARCH STATISTICS
THE ELECTRIC LIGHT AND POWER INDUSTRY

Current Statistical Data Covering 100 Per Cent of Industry

January, 1952-1953

SOURCE AND DISPOSAL OF ENERGY—MONTH OF JANUARY

	1953	1952	%
GENERATION* (Net)			
By Fuel Burning Plants	27,401,502,000	24,302,311,000	+12.8
By Water Power Plants	9,261,324,000	9,900,633,000	− 6.5
Total Generation	**36,662,826,000**	**34,202,944,000**	**+ 7.2**
ADD—Net Imports Over International Boundaries	151,842,000	154,533,000	− 1.8
Less—Company Use	152,556,000	123,922,000	+23.1
Less—Energy Used by Producer	917,298,000	803,196,000	+14.2
Net Energy for Distribution	**35,744,814,000**	**33,430,359,000**	**+ 6.9**
Lost and Unaccounted for	4,128,828,000	4,168,883,000	− 1.0
Sales to Ultimate Customers	**31,615,986,000**	**29,261,476,000**	**+ 8.0**

CLASSIFICATION OF SALES

NUMBER OF CUSTOMERS—As of January 31			
Residential or Domestic	40,811,272	39,349,411	+ 3.7
Rural (Distinct Rural Rates)	1,673,452	1,639,234	+ 2.1
Commercial or Industrial:			
Small Light and Power	5,630,575	5,532,749	+ 1.8
Large Light and Power	255,261	247,327	+ 3.2
Other Customers	158,394	162,406	− 2.5
Total Ultimate Customers	**48,528,954**	**46,931,127**	**+ 3.4**
KILOWATTHOUR SALES—During Month of January			
Residential or Domestic	9,081,104,000	8,257,308,000	+10.0
Rural (Distinct Rural Rates)	539,756,000	500,525,000	+ 7.8
Commercial or Industrial:			
Small Light and Power	5,594,237,000	5,133,335,000	+ 9.0
Large Light and Power	14,809,842,000	13,750,968,000	+ 7.7
Street and Highway Lighting	362,760,000	342,185,000	+ 6.0
Other Public Authorities	720,037,000	720,012,000	+ 0.0
Railways and Railroads:			
Street and Interurban Railways	262,954,000	311,863,000	−15.7
Electrified Railroads	212,231,000	210,495,000	+ 0.8
Interdepartmental	33,065,000	34,785,000	− 4.9
Total to Ultimate Customers	**31,615,986,000**	**29,261,476,000**	**+ 8.0**
Revenue from Ultimate Customers	**$569,333,600**	**$522,836,100**	**+ 9.0**

RESIDENTIAL OR DOMESTIC SERVICE

AVERAGE CUSTOMER DATA—For 12 months ended January 31			
Kilowatthours per Customer	2,183	2,021	+ 8.0
Average Annual Bill	$60.47	$56.79	+ 6.5
Revenue per Kilowatthour	2.77¢	2.81¢	− 1.4

* By Courtesy of the Federal Power Commission.

THE EDISON ELECTRIC INSTITUTE BULLETIN is published monthly by the Edison Electric Institute, an association of electric light and power companies in the United States and its territorial possessions. Its affiliate members consist of members of the Canadian Electrical Association.

The objectives of the Edison Electric Institute are:

The advancement in the public service of the art of producing, transmitting, and distributing electricity and the promotion of scientific research in such field.

The ascertainment and making available to the members and the public of factual information, data, and statistics relating to the electric industry.

To aid its operating company members to generate and sell electric energy at the lowest possible price commensurate with safe and adequate service, giving due regard to the interests of consumer, investor, and employee.

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Closing date for the BULLETIN is the tenth of the month preceding the month of issue.

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The EDISON ELECTRIC INSTITUTE BULLETIN

May, 1953

Vol. 21 No. 5

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CONVENTIONS AND MEETINGS

1953

MAY

1 PIP Mid-Atlantic Regional Meeting, Hotel Biltmore, New York, N. Y.

1- 2 Controllers Institute of America, Pacific Coast Conference, Hotel Ambassador, Los Angeles, Calif.

3- 6 EEI Purchasing and Stores Committee Annual Meeting, Hotel Statler, Detroit, Mich.

4- 5 EEI Accident Prevention Committee, Edgewater Beach Hotel, Chicago, Ill.

4- 6 Northwestern Electric Light and Power Association, Business Development Section, Davenport Hotel, Spokane, Wash.

5- 6 EEI Transmission and Distribution Committee, Edgewater Beach Hotel, Chicago, Ill.

5- 6 PIP West North Central Regional Meeting, Russell Lamson Hotel, Waterloo, Iowa

7- 8 PEA Relay Committee, Valley Forge Hotel, Norristown, Pa.

7- 8 Great Lakes Power Club Spring Meeting, Indianapolis Athletic Club, Indianapolis, Ind.

7- 8 PEA Industrial Sales Conference, Galen Hall, Wernersville, Pa.

7- 8 PUAA Annual Convention, Chase Hotel, St. Louis, Mo.

11-12 EEI Electrical Equipment Committee, Sir Walter Hotel, Raleigh, N. C.

12-13 PEA Electrical Equipment Committee, Benjamin Franklin Hotel on May 12, Edison Building Auditorium on May 13, Philadelphia, Pa.

12-13 EEI Commercial Cooking Conference, Sheraton Hotel, Chicago, Ill.

13-15 Pacific Coast Electric Association Annual Convention, Hoberg's, Lake County, Calif.

14-15 IES East Central Regional Conference, Hotel Lord Baltimore, Baltimore, Md.

14-15 PEA Hydraulic Power Committee, York, Pa.

14-15 PEA Transmission and Distribution Committee, Skytop, Pa.

18 PIP Inter-Regional Committee, Chicago, Ill.

18-19 EEI Prime Movers Committee, Hotel Chase, St. Louis, Mo.

18-19 IES Southern Regional Conference, Sedgefield Inn, Greensboro, N. C.

18-20 National Committee for Utilities Radio, Annual Meeting, Jung Hotel, New Orleans, La.

20 EEI Industrial Power and Heating Section, Ft. Sumter Hotel, Charleston, S. C.

20-22 Northwest Electric Light & Power Association, Accounting and Business Practice Section and Personnel and Safety Section, Newhouse Hotel, Salt Lake City, Utah

21-22 PEA Systems Operation Committee, Harrisburg, Pa.

21-22 EEI Industrial Power and Heating Section Joint Meeting with Southeastern Electric Exchange Industrial Power Sales Conference, Fort Sumter Hotel, Charleston, S. C.

24-29 National Association Electrical Distributors 45th Annual Convention, Chicago, Ill.

25-26 IES Great Lakes Regional Conference, Syracuse Hotel, Syracuse, N. Y.

25-27 EEI Meter and Service Committee, Wentworth-by-the-Sea, Portsmouth, N. H.

25-28 ASME Oil and Gas Power Conference and Exhibit, Hotel Schroeder, Milwaukee, Wis.

28 EEI Accounting Executive Committee, EEI Headquarters, New York, N. Y.

28-29 PEA Prime Movers Committee, Beachcombers Resort Hotel, Erie, Pa.

1953

JUNE

1 PIP Steering Committee, Hotel Traymore, Atlantic City, N. J.

1 EEI Industrial Relations Committee, in conjunction with EEI Annual Convention, Atlantic City, N. J.

1- 4 EEI 21st ANNUAL CONVENTION, ATLANTIC CITY, N. J.

15-16 EEI Hydraulic Power Committee, Multnomah Hotel, Portland, Ore.

15-19 ASCE Convention, Hotel Casa Blanca, Miami Beach, Fla.

16 PIP Mid-Atlantic Region, Safe Harbor, Pa.

21-23 Wisconsin Utilities Association Accounting Section Convention, Schwartz Hotel, Elkhart Lake, Wis.

21-24 Michigan Electric Association Annual Meeting, Mackinac Island, Mich.

22-24 EEI Area Development Institute, University of Michigan, Ann Arbor, Mich.

25-27 CEA Annual Convention, Manor Richelieu, Murray Bay, P. Q.

28-30 National Appliance and Radio-TV Dealers Association, Mid-Year Meeting, Conrad Hilton Hotel, Chicago, Ill.

JULY

17 EEI Industrial Relations Committee, in conjunction with Personnel Section, Wisconsin Utilities Association, Green Bay, Wis.

AUGUST

5-8 International Association Electric League's 18th Annual Meeting, Fairmont Hotel, San Francisco, Calif.

SEPTEMBER

14-18 IES National Technical Conference, Commodore Hotel, New York, N. Y.

17-20 Public Utilities Association of Virginias' Annual Meeting, Greenbrier, White Sulphur Springs, W. Va.

18-19 Maryland Utilities Association Fall Conference, Cavalier Hotel, Virginia Beach, Va.

20-23 Rocky Mountain Electric Association 50th Annual Fall Convention, Broadmoor Hotel, Colorado Springs, Colo.

21-26 International Association Electrical Inspectors, Silver Jubilee Meeting, Edgewater Beach Hotel, Chicago, Ill.

27-30 Controllers Institute of America, Annual Meeting, Hotel Statler, Boston, Mass.

OCTOBER

7- 9 Indiana Electric Association Annual Convention, French Lick Springs Hotel, French Lick, Ind.

8- 9 EEI Transmission and Distribution Committee, Hotel Nicollet, Minneapolis, Minn.

12-13 Iowa Utilities Association Management Conference, Hotel Fort Des Moines, Des Moines, Iowa.

12-14 EEI Industrial Relations Committee, Fall Round-Table Conference, Sheraton Hotel, Chicago, Ill.

19-21 ASA 4th National Standardization Conference and 35th Annual Meeting, Waldorf-Astoria, New York, N. Y.

19-23 ASCE Annual Convention, Hotel Statler, New York, N. Y.

21 PIP Steering Committee, Edgewater Beach Hotel, Chicago, Ill.

22-23 PIP Workshop, Edgewater Beach Hotel, Chicago, Ill.

NOVEMBER

2- 3 EEI Electrical Equipment Committee, Jung Hotel, New Orleans, La.

11-13 Wisconsin Utilities Association, Electric and Gas Section, Hotel Schroeder, Milwaukee, Wis.

21st Annual EEI Convention Program to Present View of Attainments, Appraisal of Future

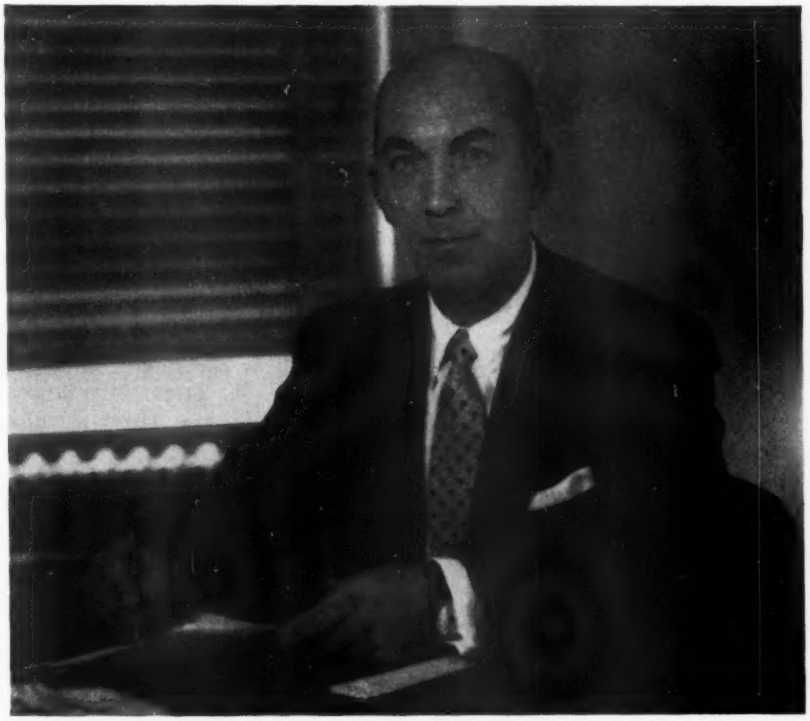
THE program of the Institute's 21st Annual Convention, to be held Monday through Thursday, June 1-4, in Atlantic City, N. J., is geared to present a searching view of the industry's present attainments and an appraisement of what it can expect, and what is expected of it, in the future.

During the Convention, a thorough examination by experts will be made of some of the electric industry's principal concerns—the Atomic Age, and our place in it; government, with our responsibilities to it and our regulation by it; the community, and our relationship to it; the financial community, and our part in it; and continued development for personnel leadership and technical advancement.

All six of the Convention's general sessions will be held in the Ballroom of Convention Hall. B. L. England, President of the Institute, will deliver the opening address and preside at the first, second, third, and sixth sessions, to be held on Monday, Tuesday, and Thursday, while the Institute's Vice President, Walter H. Sammis, will conduct the fourth and fifth sessions, both of which will be held on Wednesday.

Convention speakers during the first three sessions will include Eugene S. Loughlin, President, National Association of Railroad and Utilities Commissioners, and Chairman, Connecticut Public Utilities Commission; D. W. Tracy, President, International Brotherhood of Electrical Workers; Edward T. McCormick, President, American Stock Exchange; Marvin Chandler, Vice President, Reis & Chandler, Inc.; Joseph M. Bell, President, New York State Electric & Gas Corp.; Albert H. Gordon, Partner, Kidder, Peabody & Co.; Arnold R. LaForce, Vice President, Metropolitan Life Insurance Co.; Frederick W. Page, Vice President, Tri-Continental Corp.; Grover C. Neff, President, Wisconsin Power and Light Co.; Thomas Nelson, Partner, Rogers, Slade & Hill; H. E. Dexter, Vice President, Central Hudson Gas & Electric Corp.; F. E. Verdin, Director of Personnel, The Cleveland Electric Illuminating Co.; Virgil K. Rowland, Personnel Assistant, Accounting, The Detroit Edison Co.; and Dr. Horace Hildreth, President, Bucknell University.

Subsequent speakers will be Ashton B. Collins, Reddy Kilowatt Service; J. R. Hartman, Vice President, The Cincinnati Gas & Electric Co.; Charles E. Oakes, President, Pennsylvania Power & Light Co.; Harry Restofski, Vice President, West Penn Power Co.; W. W. Lynch, President



B. L. ENGLAND
President of the Edison Electric Institute

EUGENE S. LOUGHLIN
President, National Association of Railroad and Utilities Commissioners

D. W. TRACY
International President, International Brotherhood of Electrical Workers

EDWARD T. MCCORMICK
President, American Stock Exchange

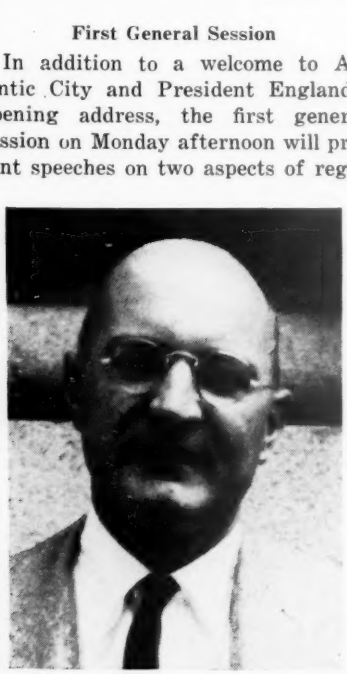
and General Manager, Texas Power & Light Co.; Louis V. Sutton, President and General Manager, Carolina Power & Light Co.; N. B. Gussett, President, Iowa Power and Light Co.; C. N. Phillips, Director of Research, Ebasco Services Inc.; Gordon Dean, Chairman, Atomic Energy Commission; Dr. John R. Dunning, Dean of Engineering, Columbia University; Walker L. Cisler, President, The Detroit Edison Co.; and Edgar H. Dixon, President, Middle South Utilities, Inc.

First General Session

In addition to a welcome to Atlantic City and President England's opening address, the first general session on Monday afternoon will present speeches on two aspects of regulation and free enterprise and the premier showing of a film produced for the Institute. In his speech entitled "Today's Regulations of Utilities," Eugene S. Loughlin, President of the National Association of Railroad and Utilities Commissioners and Chairman of the Connecticut Public Utilities Commission, will consider the importance of a regulatory climate, neither unrealistically stringent nor generous, in its relation to equitable utility operations and a solid economy. It is Mr. Loughlin's opinion that sound organic legislation; informed, dispassionate, and mature interpretation; adequately staffed and compensated commissions; and a mutually cooperative attitude by companies, commissions, and rate-payers will do much to cement a strong utility structure, and, therefore, a strong economy. Better, not more, regulation is the key, he feels.

"Labor's Interest in Free Enterprise" will be the subject of an address by D. W. Tracy, International President of the International Brotherhood of Electrical Workers.

The film, a dramatic sound-color portrayal entitled "Pole Top Rescue," stars The Cleveland Electric Illuminating Co. line crew that demonstrated the Oesterreich Pole Top Method of Resuscitation at last year's Convention.

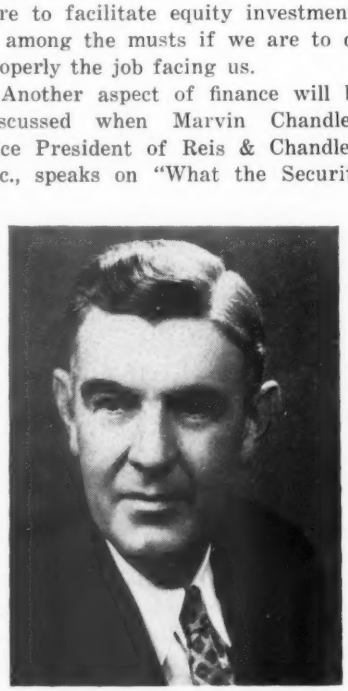


MARVIN CHANDLER
Vice President, Reis & Chandler, Inc.

Second General Session

Edward T. McCormick, President of the American Stock Exchange, will be the first speaker Tuesday morning at the second general session. Talking on "Your Financial Community," Mr. McCormick will point out that the financial community has met the task of financing industrial growth and keeping the life blood of American enterprise flowing but that finding essential fresh equity capital for new ventures and for expansion of seasoned industries has become a serious problem. He is of the opinion that a complete overhaul of our tax structure to facilitate equity investments is among the musts if we are to do properly the job facing us.

Another aspect of finance will be discussed when Marvin Chandler, Vice President of Reis & Chandler, Inc., speaks on "What the Security



JOSEPH M. BELL
President, New York State Electric & Gas Corp.

ALBERT H. GORDON
Partner, Kidder, Peabody & Co.

ARNOLD R. LAFORCE
Second Vice President, Metropolitan Life Insurance Co.

FREDERICK W. PAGE
Vice President, Tri-Continental Corp.

Analyst Wants to Know About A Company." In his talk, Mr. Chandler will answer these questions: what facts about your company are significant to the security analyst, how does he want them presented, what can you do to guide him in reaching a sound and fair conclusion about the securities of your company, and what are the things he *should* know, even if he does not recognize the need himself?

Participating in a panel discussion on "Financial Outlook As It Affects Public Utilities" will be Albert H. Gordon, Partner of Kidder, Peabody & Co.; Arnold R. LaForce, second Vice President of the Metropolitan Life Insurance Co.; and Frederick W. Page, Vice President of Tri-Continental Corp. Joseph M. Bell, President of New York State Electric & Gas Corp., will be moderator for the panel.

During these years of unprecedented expansion for the industry, finance has become a major problem of managements who, in some instances, have had little previous direct experience with the financial community. This panel, members of which are experts on markets for bonds, debentures, and preferred and common stocks, will explore present market conditions and discuss probable trends in the near future. An important and interesting feature will be audience participation through questions collected during the meeting and addressed to members of the panel.

its moderator. Panel members will be H. E. Dexter, Vice President of Central Hudson Gas & Electric Corp.; F. E. Verdin, Director of Personne. for The Cleveland Electric Illuminating Co.; and Virgil K. Rowland, Personnel Assistant, Accounting, for The Detroit Edison Co. In recent years, programs have been developed for training in communications and in leadership to get larger results through the efforts of others. Today, the emphasis on the development of individuals in supervisory and executive ranks is taking equal importance with improvements involving methods and processes with machinery and equipment. The panel will review the experiences of two companies that have developed a systematic program

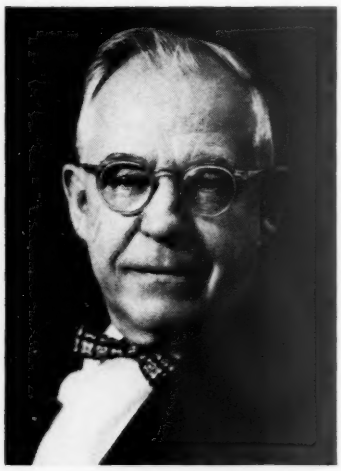
Third General Session

At the third general session on Tuesday afternoon, the first speaker will be Grover C. Neff, President of Wisconsin Power and Light Co., who will have as his topic "Leadership—Its Place in Planning For the Future." Mr. Neff will emphasizez that the present leaders of the operating electric companies of the United States have the responsibility of doing whatever is necessary to insure that sufficient numbers of the right kind of people are properly trained and prepared to assume leadership of our rapidly growing companies, as need and occasion arise.

A panel, which will discuss "What Companies Are Doing in Developing Leaders," will have Thomas Nelson, Partner of Rogers, Slade & Hill, as

GROVER C. NEFF
President,
Wisconsin Power and Light Co.

THOMAS NELSON
Partner, Rogers, Slade & Hill



H. E. DEXTER
Vice President, Central Hudson Gas & Electric Corp.

VIRGIL K. ROWLAND
Personnel Assistant, Accounting, The Detroit Edison Co.

F. E. VERDIN
Director of Personnel, The Cleveland Electric Illuminating Co.

in the field of leadership training. Some of the most effective methods for executive and supervisory development will be identified and discussed.

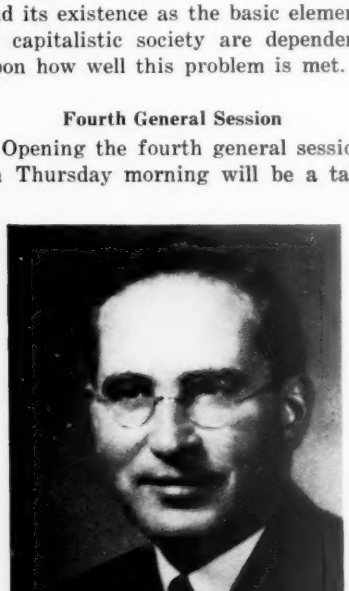
Dr. Horace Hildreth, President of Bucknell University, will address the Convention during its third general session on the important subject, "Leadership and the Electric Industry." Discovering and developing leaders is the number one problem of today's executives. The financial and sociological success of the industry and its existence as the basic element of capitalistic society are dependent upon how well this problem is met.

Fourth General Session

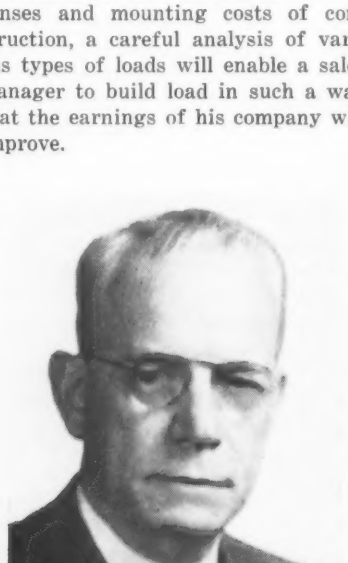
Opening the fourth general session on Thursday morning will be a talk entitled "How It's Being Done," by Ashton B. Collins, Director of Reddy Kilowatt Service. In his speech, Mr. Collins will describe the kind of job being done today by the electric companies in advertising, public relations, and sales promotion.

"Building Profitable Load" will be the subject of a speech by J. R. Hartman, Vice President of The Cincinnati Gas & Electric Co., and Chairman of the EEI Commercial Division General Committee. He will point out that in these days of rising operating expenses and mounting costs of construction, a careful analysis of various types of loads will enable a sales manager to build load in such a way that the earnings of his company will improve.

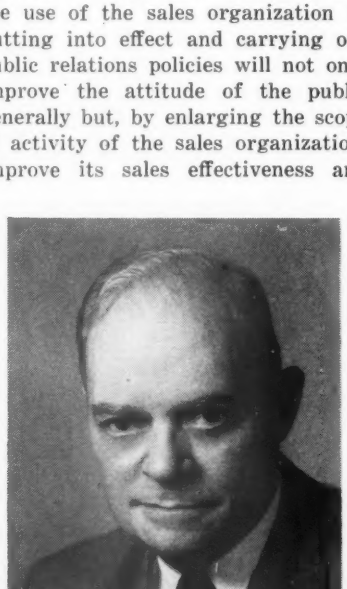
Charles E. Oakes, President of Pennsylvania Power & Light Co., in his address entitled "Salesmanship Can Improve Public Relations," will emphasize that public relations is fundamentally the building of good will at the home town level. It is Mr. Oakes' opinion that selling in the public utility field must be planned on a long term basis, and that there are many areas where sales policies and public relations policies are intertwined. He will state his feeling that the use of the sales organization in putting into effect and carrying out public relations policies will not only improve the attitude of the public generally but, by enlarging the scope of activity of the sales organization, improve its sales effectiveness and



DR. HORACE HILDRETH
President, Bucknell University



ASHTON B. COLLINS
Director, Reddy Kilowatt Service



J. R. HARTMAN
Vice President, The Cincinnati Gas & Electric Co.

CHARLES E. OAKES
President, Pennsylvania Power & Light Co.

HARRY RESTOFSKI
Chairman, Prize Awards Committee

W. W. LYNCH
President and General Manager, Texas Power & Light Co.

gain greater local recognition of its personnel.

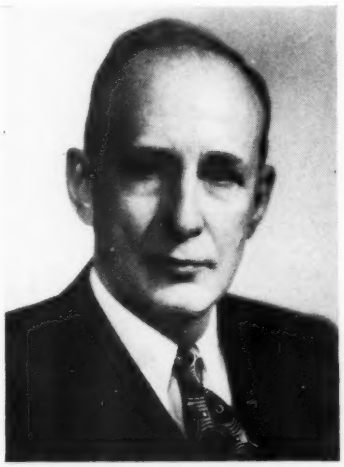
The report of the EEI Prize Awards Committee will be made at this session, by its Chairman, Harry Restofski, Vice President of West Penn Power Co.

Fifth General Session

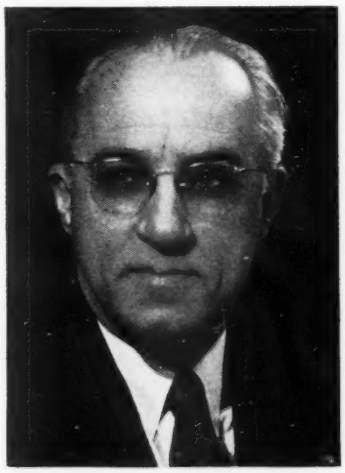
On Wednesday afternoon, at the fifth general session, W. W. Lynch, President and General Manager of Texas Power & Light Co., will be the first speaker. In his speech, "Lives . . . Dollars . . . Friends," Mr. Lynch will show how interest, effort, and money devoted to a sound and vigorous safety program will pay big dividends in human lives, in better and more efficient operations, in reduced insurance costs and death and disability claims, and in the improvement of public good will.

Louis V. Sutton, President and General Manager of Carolina Power & Light Co., will describe his company's phenomenally successful community development program. Mr. Sutton admits that helping communities to help themselves has the goal of helping the power company as well. "Helping to Build A Finer Carolina," his talk's subject, is the caption for C.P.&L.'s community development program and the catch-phrase for most of its institutional advertising and its identity as a civic-minded "neighbor" in every community it serves. An initial success in 1952, the program has been expanded in 1953 to permit individual farmers to participate. They can help to build a finer Carolina, the company says, by conserving soil and water resources.

"The Iowa Plan" will be discussed by N. B. Gussett, President of Iowa Power and Light Co. The development of the natural resources of the rich Missouri River Valley have been under discussion for decades. However, with the adoption of the Pick Sloan Plan and the beginning of construction on the upper Missouri of a number of very large dams, which include certain hydro-electric facilities, the interest of the electric industry has turned to the states of the Missouri Valley and to their reactions to these projects. Mr. Gussett will describe a plan which was



LOUIS V. SUTTON
President and General Manager, Carolina Power & Light Co.



N. B. GUSSETT
President, Iowa Power and Light Co.

C. N. PHILLIPS
Director of Research, Ebasco Services Inc.

GORDON DEAN
Chairman, Atomic Energy Commission

DR. JOHN R. DUNNING
Dean of Engineering, Columbia University

EDGAR H. DIXON
Chairman, Atomic Power Committee

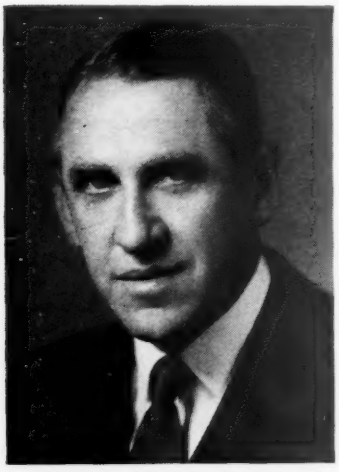
adopted by the investor-owned utilities of Iowa to combat the threat of encroaching socialism and also to benefit their customers, their employees, their owners, and the taxpayers of the nation.

Closing the session will be a discussion of the "Economics and Developments to Expect in Transporting Energy," by C. N. Phillips, Director of Research for Ebasco Services Inc. Mr. Phillips will describe factors to be considered in answering such questions as "Is it more economical to build power plants close to the fuel source, and transmit power to the load centers, or build close to the loads, and transport the raw energy to the sites?" Mr. Phillips feels that the trend toward placing large concentrations of generating capacity in one location and changing economic conditions give increasing importance to sound solutions of such practical problems.

Sixth, The Atomic Energy Session

Gordon Dean, Chairman of Atomic Energy Commission, will be the first speaker on Thursday morning, at the Convention's sixth and final general session, which will be devoted entirely to atomic energy. Speaking on "The Industrial Development of Atomic Energy," Mr. Dean will discuss those parts of the Commission's reactor development program pertinent to the achievement of economically feasible power from atomic energy, as well as some of the problems involved in this program and the goals toward which the Commission is working. He will also refer to the economic implications of atomic power and to government policies and practices which, it is hoped, will speed atomic power development.

"Broad Aspects of Use of Atomic Energy for Generation of Electric Power" will be presented in an address by Dr. John R. Dunning, Dean of Engineering at Columbia University. This distinguished physicist and educator is confident that power generation is inevitably a major phase of the future industrial development of atomic energy on an economic basis, since a large fraction of the energy involved in fission occurs almost instantaneously and shows up



D. S. KENNEDY
Chairman, Convention Program Committee

HARLLEE BRANCH, JR.
Member, Convention Program Committee

WALKER L. CISLER
Member, Convention Program Committee

About the Speakers:

Joseph M. Bell, President and Director, New York State Electric & Gas Corp., was educated at The Citadel and University of South Carolina, where he graduated in civil engineering in 1924. For the next four years, he was employed by the W. S. Barstow Co. in utility engineering work. From 1928 to 1935, he was associated with New York investment banking houses and in the latter year became public utility engineer for the Equitable Life Assurance Society of the United States. A director of several banks and insurance firms, he was named president of NYSE&G in 1949 and is a member of the EEI Financing and Investor Relations Committee.

Marvin Chandler, Vice President of Reis & Chandler, financial analysts and investment advisers, graduated from Dartmouth College and Harvard Graduate School of Business Administration. After experience with Poor's Publishing Co. and Charles D. Barney & Co. from 1933 to 1937, he served with Barret Associates as a security analyst until 1942, when he joined a construction firm doing war work. In 1944 he participated in the formation of Reis & Chandler. President of the New York Society of Security Analysis, member of the American Finance Association, and president and director of The New York Society of Security Analysts, Inc., he has lectured on and taught utility finance.

Walker L. Cisler, President of The Detroit Edison Co., joined the company in 1943, after being associated for 21 years with Public Service Electric and Gas Co. During World War II, he was stationed in the Mediterranean and European theaters, directing rehabilitation of utilities and later was in charge of similar reconstruction in postwar Germany. In late 1945 he returned to Detroit Edison as chief engineer of power plants, becoming executive vice president in 1948 and president and general manager in 1951. Chairman of the EEI Electric Power Survey Committee, Mr. Cisler is also chief consultant on electric power to the Mutual Security Agency, and a consultant to the Army and State Departments, the Atomic Energy Commission, and the National Security Resources Board.

Ashton B. Collins, Director, Reddy Kilowatt Service, has had broad experience in commercial business and in the utility field, having served as commercial manager of the Alabama Power Co. and later with six companies of the Commonwealth and Southern Corp. He originated the Reddy Kilowatt Program and developed it until it now serves 240 companies in this nation and 13 foreign countries. Traveling some 80,000 miles annually to visit utility properties, he has a unique grasp of electric industry problems. He is a former chairman of the National Electric Cookery Council.

Gordon Dean, Chairman of the Atomic Energy Commission since 1950, was first appointed to commission membership in 1949. For two years, beginning in 1945, he served in London, Berlin, and Nuremburg as assistant to the U. S. chief of counsel for the prosecution of major Nazi war **criminals. Earlier,** he was special executive assistant to Attorney Generals Homer Cummings and Robert Jackson. He is a veteran of the U. S. Navy's Intelligence Branch, a former practicing attorney, and a former teacher of law at Duke and American Universities, as well as a special lecturer to the Diplomatic Corps.

Harris E. Dexter, Vice President in Charge of Commercial Relations for Central Hudson Gas & Electric Corp., has long been active in various EEI committee activities and was chairman of the General Sales Committee in 1938. For 28 years he has been a director of Central Hudson, which he joined in 1927. Earlier, following a period of World War I military service, Mr. Dexter held various positions in China, including those of engineering consultant for Foochow Electric Co. and Fukien Telephone Co. and membership on the Min River Construction Board.

Edgar H. Dixon, President and Director of Middle South Utilities, Inc., is Chairman of the EEI Atomic Power Committee. A participant in the formation of Electric Energy, Inc., formed by five utility organizations to supply part of the electric power requirements of the Atomic Energy Commission, Mr. Dixon serves as vice president of the corporation and one of its directors. He also holds membership on the Board of Directors of Arkansas Power & Light Co., Louisiana Power & Light Co., Mississippi Power & Light Co., and New Orleans Public Service Inc.

John R. Dunning, Professor of Physics and Dean of the Faculty of Engineering of Columbia University, graduated from Nebraska Wesleyan University in 1929. He received his Ph.D. from Columbia in 1934 and the next year began his teaching career there. Holder of the Medal for Merit, a Presidential Citation, he participated in the first neutron experiments in the U. S. beginning in 1932, directed the development of the first Columbia cyclotron in 1936, and is the scientific director for the construction of a new 400,000,000-v synchrocyclotron. Mr. Dunning was a special representative to "Operation Crossroads" at Bikini in 1946.

Albert H. Gordon, a partner in the firm of Kidder, Peabody & Co., is a graduate of Harvard University and the Harvard Business School. He is a member of the Board of Directors of Burlington Mills Corp., Commercial Credit Co., General Security Assurance Corp., Old Town Corp., Textile Banking Co., and Western Public Service Co. President and chairman of the Executive Committee of the Visiting Nurse Service of New York, he is also treasurer of St. Bernard's School, and on the Board of Trustees of the Roxbury Latin School.

N. B. Gussett, President of the Iowa Power and Light Co. and a member of the EEI Board of Directors, began his utility career in 1925 with the San Antonio Public Service Co. He served in various administrative positions until 1935, when he assumed the post of manager of electric operations. Following four years in the Army in World War II, he returned to San Antonio as executive assistant, subsequently becoming acting general manager of the Public Service Board. His appointment as president of the Iowa company was announced in 1949.

J. R. Hartman, Vice President in Charge of Electric Sales, The Cincinnati Gas & Electric Co., graduated in chemical engineering from the University of Cincinnati in 1920, joining CG&E in 1923 as a research engineer. Five years later he was named manager of the Electric Sales Department, rising to his present post in 1946. On the CG&E Board of Directors, he has served as chairman of the EEI Industrial Power and Heating Section and as regional vice president of the Illuminating Engineering Society. He is a member of the Engineering Society of Cincinnati.

Dr. Horace Hildreth, President of Bucknell University, has had a distinguished career in public service. He has been a member of Maine's House of Representatives and its Senate and served two terms as Governor of Maine. During his Governorship, he was chairman of the New England Governors Conference and of the National Governors Association. Currently, Mr. Hildreth is president of the Foundation for Independent Colleges, Inc. He holds degrees from Bowdoin College and Harvard Law School and has practiced law in Boston, Mass., and Portland, Me.

Arnold R. LaForce, Second Vice President, Metropolitan Life Insurance Co., has broad responsibilities in the supervision of the company's investments in securities. Before joining Metropolitan, he was an investment analyst with the New York Stock Exchange firm of Granbery, Marache, and Lord. At one time Mr. LaForce was a professor of finance and investment at New York University. With Jules J. Bogen, one of his colleagues at NYU, Mr. LaForce is the author of *Financial Handbook.*

About the Speakers:

Eugene S. Loughlin, a graduate of Holy Cross College and Harvard Business School, has been a member of the Connecticut Public Utilities Commission since 1943, chairman since 1945. Elected vice president of the National Association of Railroad and Utilities Commissioners in 1951, he advanced to the presidency, his present post, in 1952. As a member of the Defense Electric Power Administration Council, appointed by the Secretary of the Interior, he represents all state public utilities commissions. Mr. Loughlin is also chairman of the New England Conference of Public Utilities Commissioners.

W. W. Lynch has spent his entire business career with the Texas Power and Light Co., having joined the company in 1923. He advanced to vice president in 1936, executive vice president in 1947, and president and general manager in 1949. Active in industry affairs, Mr. Lynch is a member of the EEI Board of Directors, councilor of the Texas A & M Research Foundation, director and past president of the Salvation Army Advisory Board, and former director of the National Association of Manufacturers and president of the Dallas Electric Club.

Edward T. McCormick, President of the American Stock Exchange since 1951, is a graduate of the University of Arizona with an M.S. degree from the University of California and a Ph.D. from Duke University. In 1934 he joined the Securities and Exchange Commission as a security analyst and later became assistant chief accountant and assistant director. After serving during the war with the Office of Price Administration and Civilian Supply, and the War Production Board, he was appointed Securities and Exchange Commissioner in 1940.

Grover C. Neff, a long-time leader in the electric industry and fondly regarded by many as the father of farm electrification, became superintendent of Southern Wisconsin Power Co. in 1910, and subsequently held the same position with various Wisconsin utilities. When these companies merged into Wisconsin Power & Light Co., in 1924, Mr. Neff was elected vice president in charge of operations and in 1933 became president. His extensive activities include service as president of the Edison Electric Institute in 1946-47 and as president of the Wisconsin Utilities Association.

Thomas H. Nelson has been a partner since 1942 in the management consultant firm of Rogers, Slade & Hill. From 1913 to 1934 he was associated in various capacities with the YMCA educational program. In 1935 he was appointed president of the Central YMCA College in Chicago and, at the time he became affiliated with Rogers, Slade & Hill in 1942, was serving as executive vice president and dean of instruction at the Dale Carnegie Institute. He is also president of Executive Training, Inc., an affiliate of Rogers, Slade & Hill.

Charles E. Oakes, President of Pennsylvania Power & Light Co. and a veteran of 30 years' service in the electric industry, began his career with the National Bureau of Standards in 1917. Following service with the Federal Power Commission, he joined PP&L in 1923 as an engineer and served in various positions before transferring to Birmingham Electric Co. in 1939 as president. In 1945 he returned to PP&L as chief executive of that company. President of the Edison Electric Institute in 1947-48, Mr. Oakes also has headed the Pennsylvania Electric Association and Allentown Chamber of Commerce.

Frederick W. Page graduated from Dartmouth College in 1930 and received the degree of MBA two years later from Harvard Business School. In 1933 he joined the investment firm of Tri-Continental Corp. as a public utility analyst, and served as head of the public utility department from 1942 to 1948, when he was named vice president. In addition, he is vice president of Broad Street Investing and National Investors, trustee of Irving Savings Bank, and a former director of the Atlantic City Electric Co. and Pennsylvania Water Co.

C. N. Phillips, during 30 years with Ebasco Services Inc. and its predecessor organizations, has been active in such varied fields as railroad construction and maintenance, design and construction of irrigation projects, flood control works, power plants, and other phases of engineering. Mr. Phillips has served as hydraulic engineer, valuation engineer, general consulting engineer, and since 1940, director of research for Ebasco. For six years he participated in the design and construction of the Miami Conservancy Flood Protection Project in Ohio.

Harry Restofski, Vice President, West Penn Power Co., joined the company upon graduation from Ohio Northern University in 1914 and has served in numerous capacities, including general safety director, training director, personnel director, sales promotion manager, and general sales manager. Named to his present post in 1951, he is in charge of sales, rates, advertising, and public relations. He is past chairman of the Better Light Better Sight Bureau and EEI Commercial Division General Committee.

Virgil K. Rowland, who began his career as a teacher and superintendent of public schools in Michigan, became associated in 1937 with The Detroit Edison Co. and in 1939 assumed his present duties as a personnel assistant on the staff of the secretary and general accountant. Management consultant to the War Manpower Commission during World War II, he has served on the faculty of the University of Detroit and made guest faculty appearances before the University of Michigan, Wayne University, Louisiana State University, and the University of Missouri.

Louis V. Sutton, President and General Manager, Carolina Power & Light Co., is a past president of the Institute and is a member of its Board of Directors. Following his graduation from Virginia Polytechnic Institute, Mr. Sutton worked for General Electric Co. before joining Carolina Power & Light in 1912 as a statistician. In rapid succession he held positions of increasing responsibility with that company, with Arkansas Central Power Co., and with Mississippi Power & Light Co., assuming his present duties in 1933. He is a director of the National Association of Manufacturers.

D. W. Tracy, President of the International Brotherhood of Electrical Workers, is also vice president and a member of the executive council of the American Federation of Labor. He began his career as a labor representative in Texas and was subsequently elected IBEW vice president for the southwestern states and president of the Brotherhood from 1935 to 1940. Appointed First Assistant Secretary of Labor in 1940, he resumed the office of international president in 1946 and recently was reelected to that office unanimously.

F. E. Verdin, Director of Personnel, The Cleveland Electric Illuminating Co., is Chairman of the EEI Industrial Relations Committee. Mr. Verdin was experienced in sales engineering prior to entrance into personnel work with the Niagara Hudson System, which he served for 12 years. Since joining CEI in 1943, he has been in charge of labor relations, safety, training, and personnel administration. He is a former instructor of engineering mathematics at Syracuse University, from which he was graduated in 1921.

as a high level heat. He will discuss, in terms of their engineering application to integrated industrial systems, the basic principles of nuclear reactors, thermal heat utilization, fission by-product-radiation utilization, and the production of synthetic nuclear fuels.

At this session, Walker L. Cisler, President of The Detroit Edison Co., will discuss "The Electric Industry's Responsibility in the Development of Atomic Energy as a Source of Electric Power." In addition to technical, engineering, and economic problems, legal, financial, and social matters are involved in the complex situation to be met in determining how atomic fuels may fit into the generation of electric power.

The concluding feature of the session will be the report of the EEI Atomic Power Committee. The report will be presented by the committee's Chairman, Edgar H. Dixon, President of Middle South Utilities, Inc.

Industrial Relations Meeting

A meeting of the EEI Industrial Relations Committee will be held in the Rose Room of the Hotel Traymore at 10 a.m. Monday. Speaking on "Industrial Relations—Operating Department Relations" will be W. F. Tait, Jr., Vice President in Charge of Electric Operations, Public Service Electric and Gas Co., and F. L. Larkin, Vice President, Wisconsin Electric Power Co. F. R. Rauch, Vice President, The Cincinnati Gas & Electric Co., will describe "The Experiences of the American Management Seminar Team In Austria."

Registrations for the Convention will begin at 2 p.m. Sunday in the Hotel Traymore. Delegates are urged to complete their registration, for which the fee will be $10, as soon as possible after their arrival in Atlantic City. The complete registration schedule is as follows:

Sunday, May 31—2 p.m. to 5 p.m., lobby of Hotel Traymore

Monday, June 1—8:30 a.m. to 12 noon, lobby of Hotel Traymore; 12 noon to 5 p.m., Atlantic City Convention Hall

Tuesday, June 2—8:30 a.m. to 5 p.m., Atlantic City Convention Hall

Wednesday, June 3—8:30 a.m. to 5 p.m., Atlantic City Convention Hall

Thursday, June 4—8:30 a.m. to 12 noon, Atlantic City Convention Hall

The single registration fee includes members of the family accompanying the registrant. Convention badges for gentlemen and pins for ladies, obtainable only upon registration, will be essential for admission to all business sessions and social events.

The Atlantic City Housing Bureau has reported that indications are that Convention attendance will be large and that demand for hotel accommodations will be heavy because of the Decoration Day week-end holiday. If hotel reservations have not been obtained, immediate application, specifying the exact time of arrival, should be made to M. H. Yarnall, Housing Bureau, 16 Central Pier, Atlantic City, N. J.

This year again, through the courtesy of *Electrical World*, the Convention will have its own daily newspaper. Issues of the publication, scheduled to appear on Tuesday, Wednesday, and Thursday, will contain news and official notices and will include a roster of Convention registrants.

Schedule of Recreation Events

Monday, June 1

5 p.m. to 7 p.m.—President's Cocktail Party. Vernon Room, Garden Court, and Solarium, Hotel Haddon Hall.

Tuesday, June 2

12 noon—Ladies' Luncheon, Carolina Room, Chalfonte Hotel; Bendix Home Appliances, host. A fashion show featuring the new miracle fabrics will be presented during the luncheon.

Wednesday, June 3

12:30 p.m. — Ladies' Luncheon, Trimble Hall, Claridge Hotel; Edison Electric Institute, host.

6:30 p.m.—Buffet supper; Edison Electric Institute, host. Serving times and places are as follows: 6:30 p.m., Dennis Hotel; 6:45 p.m., Marlborough - Blenheim Hotel; 7 p.m., Claridge Hotel.

8:45 p.m.—Entertainment by Fred Waring and his Pennsylvanians Warner Theatre on the Boardwalk, General Electric Co., host. Presentation of the Charles A. Coffin Award will take place before the program.

Tickets obtainable at registration, as well as Convention badges and pins, will be required for admission to all of the above recreation events.

In addition to regular train service, for the convenience of departing Convention delegates arrangements have been made for a special through train to New York, stopping at North Philadelphia. The train will leave Atlantic City at 3:30 p.m., *Daylight Saving Time*, on Thursday, June 4, and will arrive in New York at 6:32 p.m. The departure schedule permits ample time for lunch in Atlantic City after the closing general session on Thursday morning.

Fred Waring and Pennsylvanians to Appear Through Courtesy of General Electric

FRED WARING, who with his Pennsylvanians for more than 30 years has provided musical listening pleasure for the public, will return this year to the EEI Convention to entertain delegates on Wednesday evening, June 3, at the Warner Theater on the Boardwalk. As in 1951, Mr. Waring and his renowned orchestra and vocal group appear through the courtesy of the General Electric Co.

The Pennsylvanians, who grew rapidly in both prestige and in size in the early years after the organization of the first four-pieced band in 1916, were international favorites as early as the Twenties. Dances, vaudeville, moving pictures, concerts, recordings, radio, and television have each served to familiarize the American public with Mr. Waring's distinctive orchestrations and vocal arrangements.

Attesting to the strength and endurance of the group's popularity are the Pennsylvanians' continuous appearances on radio or television since their radio debut in 1933. Yet Mr. Waring has not been content to

remain one of the most successful orchestra leaders in the field of popular music.

His interest in musical education, evidenced as early as 1939 when he appeared before a convention of music educators, led to a three-day "Open House" for directors in 1945. Its success led to a summer "clinic" for directors the next year and subsequently to the establishment in 1947 of the Fred Waring Choral Workshop at Shawnee-on-Delaware, Pa. By 1951, the workshops were so popular that they "went on the road" and sessions were presented on college campuses throughout the nation. To date more than 4,000 choral directors have participated in the workshops.

Only last year Mr. Waring added to his musical activities when he sponsored the establishment of the "Festival of Song," a concert program presented by a 35-voice choral organization, which during its first tour was performed 86 times in 17 states.

John C. Parker

JOHN C. PARKER, retired Vice President of Consolidated Edison Co. of New York, Inc., died recently in Brooklyn Hospital after a short illness. He would have been 74 years old on April 15.

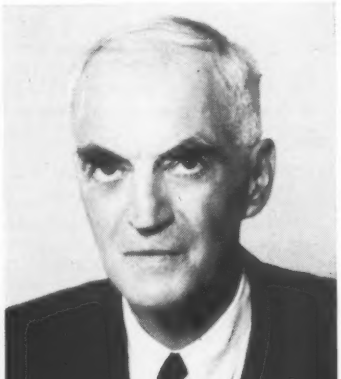
Widely known throughout the industry, Mr. Parker had contributed extensively to the advancement of electrical engineering and the art of rendering electric service. Because of his deep insight acquired through many years of active professional life, he was frequently drawn into the solution of engineering and business problems.

Born in Detroit, Mr. Parker graduated in mechanical engineering from the University of Michigan in 1901. After an apprenticeship with the General Electric Co., he became an instructor in electrical engineering at Union College, under the late Charles P. Steinmetz, and later served for nine years as a mechanical and electrical engineer for the Rochester Railway and Light Co.

He also served for seven years as professor of electrical engineering at the University of Michigan and obtained doctorates in electrical engineering from Michigan and Stevens Institute of Technology.

Mr. Parker became associated with the Brooklyn Edison Co. as an electrical engineer in 1922, later becoming vice president in charge of all the company's engineering. In the latter capacity, he directed the design and construction of the Hudson Ave. generating station, still the largest steam-electric station in the world. Serving as president of the company from 1932 to 1936, he accepted a post as vice president of Consolidated Edison Co. of New York, Inc., upon the merger of Brooklyn Edison and Con Ed in 1936.

During World War II, Mr. Parker was a consultant to the War Production Board and organized the Office of War Utilities under the Office of Production Management. Appointed a member of the National Technological



MR. PARKER

Advisory Commission by the Secretary of War, he was also a consultant to the War Manpower Commission, Foreign Economic Administration, and played an important role in the World Power Conference.

A former president of the American Institute of Electrical Engineers, Mr. Parker was associated with the Foundation for Economic Education and the National Industrial Conference Board. For more than 30 years he also gave generously of his time and effort to the work of the Institute and other industry organizations.

Coffin Award Entry Invitations Extended

FIVE electric companies, selected for their outstanding achievements during 1952, have been invited to submit entries for the annual Charles A. Coffin Award, the most coveted honor bestowed within the electric industry, it has been announced by B. L. England, Institute President.

Companies singled out to participate in the competition are the Arkansas Power and Light Co., Carolina Power & Light Co., The Detroit Edison Co., Electric Energy, Inc., and Pennsylvania Power & Light Co. Electric Energy, Inc., is the corporation formed by Central Illinois Public Service Co., Illinois Power Co., Kentucky Utilities Co., Middle South Utilities, Inc., and Union Electric Co. of Missouri to supply part of the electric power requirements of the AEC project near Paducah, Ky.

The five organizations selected by a review committee comprised of George C. Tenney, Editor of *Electrical West;* Ralph H. Flynn, Publisher of *Electrical World,* and P. B. Garrett, Editor of *Electric Light and Power,* were screened from a total of 23 previously cited for outstanding achievements by a nominating panel representing every section of the nation.

Final decision as to the winning company will be determined by a judging committee composed of Dr. James R. Killian, President of Massachusetts Institute of Technology; C. W. Kellogg, Past President of the Edison Electric Institute; and Mr. England.

The Coffin Award, which consists of a gold medallion for the winning company and $1,000 for the company's employee benefit fund, was established 31 years ago by the Charles A. Coffin Foundation, in the name of the first president of the General Electric Co. It is given "for distinguished contribution to the development of electric light and power for the convenience of the public and benefit of the industry."

Announcement of the winning company and presentation of the award will be made at special ceremonies during the Edison Electric Institute's annual convention to be held June 1-4 in Atlantic City, N. J.

19th Annual Sales Conference Emphasizes Need for Aggressive Selling Program

EMPHASIZING the need for more aggressive selling to continue the historical trend of the electric industry and to insure use of the increasing number of appliances being produced, the 19th Annual EEI Sales Conference, held at the Edgewater Beach Hotel, Chicago, March 30-April 2, was attended by over 900 sales executives who heard prominent leaders from both within and without the industry discuss the broad problems presently confronting sales forces. A general tone of optimism ran throughout the talks, with most speakers looking for a continuance of the high level of prosperity in the nation and the industry.

General Sessions

Presiding at the general sessions on Wednesday, April 1, and Thursday, April 2, was J. Reed Hartman, Vice President of The Cincinnati Gas & Electric Co. and Chairman of the EEI Commercial Division General Committee. In his opening remarks, Mr. Hartman praised the work of the Commercial Division committees in planning and producing sales aids for the industry. He then enumerated the factors which he felt pointed towards the need for an aggressive selling program: (1) recent events which have lessened the possibility of World War III in the near future, (2) construction programs which, although delayed by shortages of critical materials, will provide a substantial amount of additional generating capacity by the end of 1953 and (3) predictions by experts that personal disposable income will remain high.

Mr. Hartman called for greater cooperation between EEI and NEMA in the promotion of appliances and also for the development of new techniques for mass selling. Pointing out that the success of any national program depends entirely upon its effect at local levels, he urged electric companies to assume leadership in their local communities and suggested electrical leagues as an excellent medium for concerted action by all components of the electrical industry.

To set the theme for the remainder of the program, the first speaker, B. L. England, President of the Institute and of Atlantic City Electric Co., reviewed the status of the industry and presented the outlook for the future in a talk entitled "Today and Tomorrow in Our Industry." Stating that the electric utilities by the end of 1955 will have more than doubled their generating capacity, Mr. England pointed out the magnitude of the sales job facing the industry. He said that it will be necessary to increase the annual residential consumption from the current 2169 kwhr to 5000, the commercial use from 11,106 kwhr to 20,000, and the farm use from 2864 kwhr to 7200. As the sale and installation of an appliance today represents income to a company for a considerable length of time, Mr. England stated, the present favorable conditions call for aggressive selling now instead of in the future when the economic situation may not be as good. The wide variety of available appliances plus the high level of prosperity, Mr. England continued, makes the present particularly advantageous for cooperative sales and promotional programs.

Economic Outlook

Martin R. Gainsbrugh, Chief Economist of the National Industrial Conference Board, who discussed the economic outlook for the country, stated that private business has regained the balance it lost in early 1951 and is in far better shape to withstand the test that might be imposed by the diminishing importance of defense expenditures. "No new round of inflation now seems to be on the horizon," Mr. Gainsbrugh said.

He predicted that the 1953 gross national product (total market value of goods and services produced) may be the highest ever recorded, stating that "The gross national product in the first quarter of 1953 already is several billion dollars greater than the previous record total of the last quarter of 1952." According to Mr. Gainsbrugh, unemployment now is significantly lower than a year ago and personal and disposable income for the first quarter as a whole has averaged higher than in the fourth quarter of 1952.

Prize Awards Presentation

The final presentation of the Wednesday morning session was the awarding of the prizes for the seven contests sponsored by the EEI Prize Awards Committee. Harry Restofski, Vice President of West Penn Power Co. and Chairman of the Prize Awards Committee, conducted the presentation.

The Thomas W. Martin Rural Electrification Award was won by Philadelphia Electric Co., Philadelphia, Pa.

The George A. Hughes Awards, which recognize electric appliance sales promotion, were presented to Southern California Edison Co. for electric kitchen promotion; The Ohio Power Co. and Minnesota Power and Light Co. for electric range promotion; Pennsylvania Power and Light Co. and Central Ohio Light & Power Co. for electric water heater promotion; Philadelphia Electric Co. for electric dishwasher promotion; and Appalachian Electric Power Co. and Kentucky & West Virginia Power Co. for commercial electric cooking promotion.

Winners of the Laura McCall Awards for outstanding home service work were Mrs. Marguerite Fenner, Pacific Gas and Electric Co.; Miss Arlene Young, Central Ohio Light & Power Co.; Mrs. Eunice P. Bruyn, The Connecticut Light & Power Co.; Miss Mildred S. Ditzel, The Dayton Power and Light Co.; and Mrs. Ruth Hicks, Alabama Power Co.

Awards for Planned Lighting were presented in three categories: Commercial Lighting—The Cincinnati Gas & Electric Co., New Orleans Public Service Inc., and Pennsylvania Power & Light Co.; Residential Lighting—The Dayton Power and Light Co. and Monongahela Power Co.;

R. W. Brown (right), The Cincinnati Gas & Electric Co., accepts a Planned Lighting Commercial Award from S. L. Drumm, Chairman of the Better Light Better Sight Bureau.

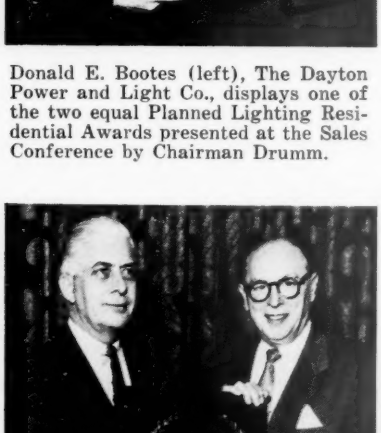
J. L. Campbell (left), New Orleans Public Service Co. Inc., accepts for his company the second of three equal Planned Lighting Awards from Chairman Drumm.

E. P. Werley (right), on behalf of his company, the Pennsylvania Power & Light Co., displays the third equal Planned Lighting Commercial Award presented by Chairman Drumm.

Donald E. Bootes (left), The Dayton Power and Light Co., displays one of the two equal Planned Lighting Residential Awards presented at the Sales Conference by Chairman Drumm.

J. R. Waters (left), on behalf of his company, the Monongahela Power Co., accepts the second of the two equal Planned Lighting Residential Awards from Chairman Drumm.

L. F. Kielsmeier (left), accepts for his company, Ohio Edison Co., one of the two equal Planned Lighting Industrial Awards presented at the meeting by Chairman Drumm.



Lee Taylor (right), The Detroit Edison Co., and Chairman Drumm hold the second of the two equal Planned Lighting Industrial Awards, which was won by Detroit Edison.

Ray Wyman, The Cleveland Electric Illuminating Co., and L. M. Holmes, The Dayton Power and Light Co. (center, left to right), display their More Power to America Awards, which recognize companies and individuals contributing to industrial electrification. K. H. Runkle, General Electric Co., made the presentations, assisted by Harry Restofski (left), Chairman, EEI Prize Awards Committee.

J. Frank Gaskill (left), Philadelphia Electric Co., accepts for his company the Thomas W. Martin Rural Electrification Award from E. C. Easter, Vice President, Alabama Power Co.

Displaying their companies' Frank Watts Awards are (left to right) M. B. Penn, Alabama Power Co., first prize; R. K. Derry, The Ohio Power Co., third prize; R. T. Jones, Pennsylvania Power & Light Co., second prize; and H. F. Barton, St. Joseph Light & Power Co., special award. R. J. Babcock, *Farm Journal*, presented the awards which recognize electric-company promotional efforts in rural areas.

Industrial Lighting—Ohio Edison Co. and The Detroit Edison Co.

Frank Watts Awards for rural electrification named Alabama Power Co. as first prize winner, Pennsylvania Power & Light Co. as second, and The Ohio Power Co. as third. A special award was made to St. Joseph Light & Power Co.

Winners of George Westinghouse Awards for automatic electric washer promotion were Florida Power & Light Co., first prize, and The Cincinnati Gas & Electric Co., second prize. The winners for electric dryer promotion were Indiana & Michigan Electric Co., first prize, and The Cleveland Electric Illuminating Co., second prize.

Selected for industrial electrification activity, The Cleveland Electric Illuminating Co. and The Dayton Power & Light Co. were named winners, in their respective classes, of the More Power To America Award.

Industrial Electrification Potential

The opening speaker for the Wednesday afternoon session, James H. Jewell, Vice President of Westinghouse Electric Corp., outlined the tremendous potential that exists in the development of industrial electrification but cautioned that unless adequate sales forces are built to take advantage of the opportunity, "too much of the excellent market potential will remain just that—potential." Explaining that the desire for more leisure time plus the demand for continued progress in the standard of living will make it necessary for industry to increase output without the benefit of a larger labor force, Mr. Jewell stated that he was convinced further modernization and utilization of electric energy could do the job.

"The industrial salesman has his work cut out for him," the speaker said. "He must have a wide knowledge of new developments in his field, imagination to apply them, and real interest in the problems and welfare of his customer." Mr. Jewell disputed the widespread contention that "there just aren't any salesmen anymore." The real crux of the selling problem, he stated, is not the lack of quality in salesmen but the lack of quantity. More salesmen are needed, and all salesmen must be used more efficiently. He concluded that more manpower, better training, and new techniques for mass selling are needed to realize the great potential that exists today in the industrial market.

Turning from the industrial market to agriculture, the next speaker, Wheeler McMillen, Editor-in-Chief of *Farm Journal*, addressed the group on the "Impact of Agriculture on the Electrical Industry." After noting the immense progress which has been made in the use of electricity in agriculture during the relatively brief period of 30 years, Mr. McMillen contended that the industry nevertheless has laid only a foundation and that new tasks for electrical power on the farm will appear each year. This trend will be aided, Mr. McMillen explained, by the fact that, while the national population is increasing each year, the number of farmers continues to decrease, thus necessitating greater production per acre and per man.

Another circumstance which will help the trend, according to Mr. McMillen, is that "farm business of the 1950's is being conducted by well educated, expertly trained people who are in every way the product of the 20th century." The use of modern methods and economical electrical energy gives the farmer an opportunity to profit from his efforts. Mr. McMillen stressed the fact that although the farmer considers convenience and comfort when buying an electrical device, the determining factor is whether it does the work at less cost.

The final speaker of the Wednesday afternoon session was Victor L. Short, President of the Institute of Human Science, who discussed the human factors involved in business leadership and selling. Basing his remarks partially on a quotation from Francis Bacon, "That which man altereth not for the better, time altereth for the worse," Mr. Short stated that the executive of today must be different from his counterpart of years ago. He must have a greater understanding of those who work for him, and one of the ways of achieving that understanding is through human engineering, "the art of dealing with people effectively."

The secret of human engineering,

according to Mr. Short, is being able to analyze people correctly and in knowing how to deal with them accordingly. Mr. Short contended that human engineering must receive greater emphasis if there is to be a return to successful salesmanship, which he considers a lost art. Just as the successful executive must understand his employees, the successful salesman must have a thorough understanding of his prospect.

In opening the Thursday morning session, John Otter, Vice President and General Manager of the Refrigeration Division, Philco Corp., predicted a "tremendous future" for room air conditioners and at the same time asked for guidance and backing from the electric companies in the promotion and sale of the new appliance. Pointing out that the room air conditioner differs from other appliances in that each room in a home represents a potential sale, Mr. Otter "guessed" that sales in 1953 would be 500,000 units and in 1958 would be 1,000,000 units. He cautioned against dependency on hot weather for sales and urged that the unit be sold not only as a "cooler" but as a year-round air conditioner. This, he added, is possible now for the first time because the units heat as well as cool.

In comparing the cost of installation in home or office of a large central system as against individual units, Mr. Otter stated that the central system cost is very high unless it is installed while the building is under construction. The cost of operation of single-room units is considerably lower, as the unit is only on when the room is being used.

In his speech, Lowell B. Mason, member of the Federal Trade Commission, used fantasy as the medium by which to warn of the dangers that would develop if the trend towards bureaucratic control of business continues. Projecting himself into the year 2053, Commissioner Mason visualized the complete domination of all phases of business by the government. Competition was eliminated as the business activities of the nation were completely controlled by a vast network of government officials. On this imaginary trip into the future, Mr. Mason vividly portrayed the ineptness and inefficiency which resulted from

Laura McCall Awards were presented to (left to right) Mrs. Marguerite Fenner, Pacific Gas and Electric Co., Division A; Miss Arlene Young, Central Ohio Light & Power Co., Division B; Mrs. Eunice P. Bruyn, The Connecticut Light & Power Co., Division C; Miss Mildred Ditzel, The Dayton Power and Light Co., Division C; and Mrs. Ruth Hicks, Alabama Power Co., Division C. Mrs. Elizabeth Sweeney Herbert (right), *McCall's* magazine, made the presentations.

Holding their George Westinghouse Awards are (left to right) W. T. Clark, The Cleveland Electric Illuminating Co.; J. H. K. Shannahan, Indiana & Michigan Electric Co. (second and first prize winners, respectively, in the electric-dryer classification); J. H. Keele, Florida Power & Light Co.; and E. W. Hodgetts, The Cincinnati Gas & Electric Co. (respective first and second prize winners in the electric-washer classification). J. J. Anderson (right), Westinghouse Electric Corp., made the awards.

Displaying their George A. Hughes Awards are (seated left to right) C. M. Baldwin, Minnesota Power and Light Co.; J. H. Adams, Southern California Edison Co.; H. H. Brenan, Pennsylvania Power & Light Co.; and B. D. Painter, Appalachian Electric Power Co. Standing (left to right) are H. O. Gray, Central Ohio Light & Power Co.; E. M. Cobb, The Ohio Power Co.; Dwight Anneaux, Hotpoint Co., who made the presentations; Chairman Restofski; J. J. Gorman, Philadelphia Electric Co.; and G. A. Weatherton, Kentucky & West Virginia Power Co.

the government domination of our way of life.

Clarence H. Linder, Vice President and General Manager of the Major Appliance Division, General Electric Co., declared that "the stake of the electric industry in the continued expansion and development of the major appliance business and electric home is equal to or greater than the electric manufacturing industry" and called upon utilities to formulate "bold and aggressive programs" for an intensified promotion of electrical living. Citing the building of Appliance Park as a manifestation of GE's belief in the future importance of major appliances, Mr. Linder predicted the all-electric home will become an increasingly important factor in electric company revenue. He asked for a reappraisal of the industry's plan for promoting the electric home and called upon utilities to join with GE in conducting a nationwide load survey of the electric home so that the most effective and intelligent promotion may be planned.

The final speaker of the General Sessions was Jackson Martindell, President of the American Institute of Management, who stated that higher rates and excellent management are all-important to the electric power industry today. Mr. Martindell said good management should succeed in obtaining adequate rates, which would result in equitable returns to stockholders and less reliance on borrowed money instead of capital ownership. In addition, he emphasized the importance of management audits in broadening the outlook of executives.

At the General Luncheon, which traditionally closes the Sales Conference, Charles T. Evans, Assistant to the President, Arkansas Power & Light Co., was the speaker. In his talk, Mr. Evans told "about what makes the American system tick." Explaining that although production is the foundation of all business, Mr. Evans declared that "the genius—the dynamics of the American business system are selling and are what set us apart from all other systems that I know anything about." His witty and philosophical talk served as a worthwhile climax for the Conference.

Preceding the general sessions a Home Service Conference and four sectional meetings covering the commercial, farm, industrial, and residential markets were held.

At the Home Service Conference on March 30, the program was divided into five major topics: (1) demonstration ideas, (2) home safety, (3) home lighting, (4) helping the disabled housewife, and (5) the value of home service activities. At the morning session, following opening remarks by Miss Elizabeth Williams, Chairman, Miss Helen Kirtland, Hotpoint Institute, Miss Karen Fladoes, Kelvinator Kitchen, and Miss Verna L. Miller, Frigidaire Division, General Motors Corp., discussed the newest ideas and techniques being used in demonstrating electric water heaters, ranges, freezers, and dryers before women's groups. Following these presentations, Miss Irene L. Muntz, Rochester Gas and Electric Corp., pointed out the proper utilization of electrical appliances and devices for safe living in the home.

The opening portion of the afternoon session was devoted to a discussion of home lighting by E. J. Hurley, The Detroit Edison Co., Mrs. Avis Broadhurst, West Penn Power Co., and Miss Edna Stephany, Pennsylvania Power & Light Co. Mr. Hurley described ways in which home service departments can cooperate with builders in installing good lighting in new homes, while Mrs. Broadhurst explained the method of West Penn Electric Home Bureau cooperation with builders in 1952 in the planning of 13 exhibit homes, seven of which were "light conditioned." Miss Stephany said her company carried the light-conditioned home exhibit idea one step further by installing a Home Lighting Center on its sales floor, thus providing a permanent display of the newest residential lighting ideas.

The disabled homemaker was the subject of the next discussion, with Miss Dorothea Underwood, Niagara Mohawk Power Corp., describing the operation of a model kitchen for training disabled housewives to carry on their work. Dr. Margaret H. Austin, Women and Children's Hospital of Chicago, told of the beneficial effects of such training on the disabled patient. Concluding the program, Miss Elizabeth Parker, Georgia Power Co., and Miss Valentine Thorson, Northern States Power Co., discussed the need for convincing management of the value of home service work.

The four sectional meetings were held concurrently on Tuesday, March 31. In opening the Commercial Sales Section meeting S. S. Sansbury, Chairman, reviewed the activities of the four committees comprising the section. A panel discussion, moderated by J. C. Murtha, Consolidated Edison Co. of New York, Inc., included as panel members John W. H. Evans, Store Modernization Institute, and B. J. Martin, B. J. Martin & Co. The topic was the use of clinics in the promotion of the modernization of commercial establishments. Leslie W. Scott, Kellogg Center, Michigan State College, described courses for commercial students in the field of hotel and restaurant management. The next speaker, R. W. Butts, Ohio Edison Co., warned that new commercial building in the coming years cannot be expected to sustain a satisfactory lighting load growth and called for greater sales and promotional efforts in commercial relighting. R. M. Hoot, Philadelphia Electric Co., closed the morning session with a demonstration of the wide variety of visual aids available for street lighting education.

H. M. Blackburn, Potomac Electric Power Co., opened the afternoon session with a description of the new developments in commercial cooking promotional activities—the inter-area information groups—whose purpose is to exchange data, ideas, and experience in commercial cooking sales activities. A demonstration of new microwave electric cooking was given by the Raytheon Manufacturing Co. and the meeting was closed by Harry Restofski, West Penn Power Co., and C. H. Rex, General Electric Co. Mr. Restofski called upon the utilities to devote more effort to the promotion of street lighting, while Mr. Rex reviewed the latest edition of "American Standards Practice for Street and Highway Lighting."

At the Farm Section meeting, E. D. Smith, Chairman, warned that electric companies should never become complacent about the job that they are doing or have done. The next speaker, E. O. George, The Detroit Edison Co., set as a goal 70 billion kwhr used annually by the American farmers in 1970. He stated that the utilities must maintain aggressive rural service departments which will show the farmer how to make more money by using more electricity. Roy W. Godley, The Kroger Co., told the group that power

companies should aid the farmer in doing a better job of producing and marketing. He claimed that companies which have put forth real effort in agricultural development have found it to be a good investment. As the final speaker of the morning session, Guy L. Noble, National Committee on Boys and Girls Club Work Inc., declared that one way to develop the farm market is to work closely with the farm youth organizations.

Merritt D. Hill, Dearborn Motors Corp., discussed "Power and Prosperity" at the farm luncheon at Wednesday noon.

Paul W. Chapman, College of Agriculture, University of Georgia, presenting the first talk of the afternoon, declared that the increased use of electricity to do farm work and increase efficiency will be the outstanding agricultural achievement of the present decade. J. Rushton, Farm and Rural Market Development Committee of NEMA, described the importance of home appliances in the farm market, and Benjamin G. Sanderson, Deepfreeze Appliance Division, Motor Products Corp., the concluding speaker, called upon electric companies for more aggressive sales activities in the rural field.

Maxwell Cole, Chairman, opened the Industrial Power and Heating Section meeting by declaring that if it is true that we are entering a period in which a slackening of industrial activity will occur, then it will be necessary for the

(*Continued on page* 167)

Businessmen, Scientists, and Educators Organize Atomic Industrial Forum

INCORPORATION papers for an organization of businessmen, engineers, scientists, and educators interested in the industrial development and application of atomic energy for peaceful uses have been filed with the Secretary of State of New York.

Presidents or key atomic energy executives of 13 corporations and institutions of higher education were named as directors of the group, which will be known as the Atomic Industrial Forum, Inc. The Forum will have its present headquarters in the Engineering Societies Building, 29 West 39th Street, New York, N. Y.

Purposes Four-fold

The purposes for which the Forum is being organized are four-fold, according to the incorporation certificate. They are:

1. To foster and encourage the development and utilization of atomic energy in accordance with the best traditions of American democracy and free competitive enterprise;
2. To provide a forum in which individuals and organizations may consult and cooperate in the resolution of problems relating to atomic energy which are of concern either to the nation, to industry, or to the public generally;
3. To promote the dissemination, to the extent consistent with national security, of knowledge and understanding relating to the development and utilization of atomic energy; and
4. To foster and encourage research and development relating to atomic energy.

Members of the Board of Directors of the Forum are Albert L. Baker, Chairman, Vitro Corp. and Vitro Manufacturing Co.; Walker L. Cisler, President, The Detroit Edison Co.; John L. Collyer, President, B. F. Goodrich Co.; Dr. T. Keith Glennan, President, Case Institute of Technology; Dr. Frederick L. Hovde, President, Purdue University; Alfred Iddles, President, Babcock & Wilcox Co.; Joseph A. Martino, President, National Lead Co.; John R. Menke, President, Nuclear Development Associates; Adm. Earle W. Mills, President, Foster-Wheeler Corp.; Dr. Mark E. Putnam, Executive Vice President, The Dow Chemical Co.; Ross W. Thomas, Vice President, Phillips Petroleum Co.; Howard G. Vesper, Vice President, Standard Oil Co. of California, and J. B. Woodward, Jr., President, Newport News Shipbuilding & Dry Dock Co.

The association was formed as a result of a proposal by Dr. Glennan shortly after he had resigned as a member of the Atomic Energy Commission and resumed the presidency of Case. Dr. Glennan's suggestion, which was made before the Manufacturing Chemists' Association in November, 1952, was that an organization independent of government should be formed of business and other interests concerned with nonmilitary development of atomic energy to help further the advancement of this energy source.

Dr. Glennan's idea found a quick response with a considerable number of businessmen. Among these were Mr. Cisler, a former consultant to the Atomic Energy Commission, with whom Dr. Glennan had earlier discussed this matter. Mr. Cisler's company is engaged, along with The Dow Chemical Co., in studies of the economics and design of commercial reactors or atomic furnaces which would provide heat for large-scale generation of electric power. Several industrial, chemical, engineering, electric, and other companies are associated in the Dow Chemical - Detroit Edison breeder-reactor project.

Meetings of some 40 interested individuals were held in New York, and out of these meetings came the organization which has now been legally established.

A broad membership of all businessmen, engineers, scientists, educators, and others involved or interested in atomic energy as a new and promising industry will be sought by the Forum, it was stated by its founders. There will be two classes of membership. Regular memberships will be open to individuals who are lawfully entitled to access to any "restricted data" as defined in the Atomic Energy Act of 1946. Special membership will be open to individuals, corporations, associations, partnerships, and trusts which are now, or expect to be, engaged in research, development, or operations in atomic energy. Regular members only will have voting privileges and be eligible to serve on the Forum's board of directors.

Dr. Glennan, in proposing an association, said, "There is no question but that the enlightened self-interest of competitive enterprise in the course of atomic energy development is also the public interest, and I don't think I am alone in this belief. For evidence of this, I need only point to the atomic energy law of this country, which declares that one of the principal objectives of the atomic energy program is the stimulation of free competition in private enterprise."

Fatal Accidents in the Electric Light and Power Industry

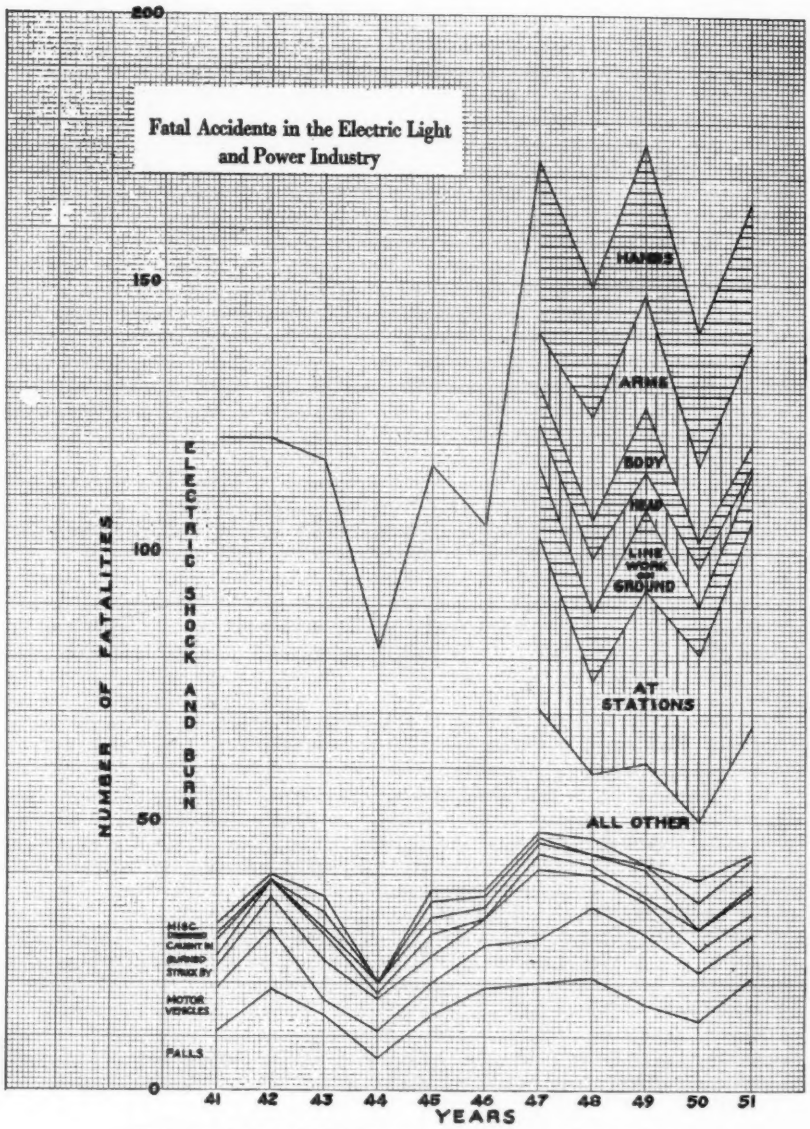
S. H. Young
The Hartford Electric Light Company

OF all the summaries made from records in our industry, none brings home to us with more impact the necessity of safety consciousness on the part of all employees and supervisors than does a tabulation of fatal accidents. Each year, and for the same reasons, a group of our trained and experienced employees is listed in such a tabulation. Only in 1947 and 1949 has this list been longer than in 1951, during which the 165 fatalities reviewed and classified on pages 148-149 occurred.

Seldom is it necessary to add a new cause to the summary. The accident-cause pattern remains constant year after year. In 1951, as in all previous years, electric shock and burn cases were in the majority. There were 121 of these or 73.3 per cent of the total. The 11-year average for electric shock and burn fatalities is 71.3 per cent of the total.

In 1951 there were 26 hand-contact and 19 arm-contact fatalities while working on poles, nine while doing line work on the ground, and 38 electric shock and burn cases at stations and substations. The causes for these accidents were, as always, failure to wear rubber gloves in the primary area, failure to cover up conductors, failure to tag out lines being worked on, failure to test and ground conductors before starting work, failure to maintain clearance, and underestimation of the hazard by both the workman and his supervisor. There was also the usual number of cases of being "physically present but mentally absent." Until workmen and supervisors recognize the need for established safety precautions, the fatality list for years to come will be much the same.

The accompanying graph may give a clearer picture of our record over the last 11 years than words and numbers can do. It shows how consistently the various types of accidents have occurred and, at a glance,



*Hand, arm, body, and head contacts occurred while working on poles.

shows where extra accident-prevention effort is needed. For instance, hand and arm contacts are quite consistent. Body contacts vary little from year to year. Head contacts were constant until 1951 when only one occurred. (Can this be due to the more general use of linemen's safety hats?) The number of electric shock and burn accidents at stations does vary somewhat, but these consistently compose a substantial part of the total each year.

The accidents not due to electric shock and burn are shown at the bottom of the graph. These, also, are quite constant and in 1951 totaled 44, which is more than for any year except 1947 and 1948. Falls accounted for 21 fatalities, the highest

Review and Classification of 165 Fatal Accidents Reported During 1951
Within the Electric Light and Power Industry
Edison Electric Institute Accident Prevention Committee

(This summary was compiled from detailed reports submitted to the Institute.)

			PATH OF CURRENT: VICTIM Entry	VICTIM Exit	EQUIPMENT Energized	EQUIPMENT Ground	Voltage	Occupation	DESCRIPTION
			Hand	---	Sec. Wire	---	115-230	Lineman	1.Replacing sec. service. Made contact with sec. wire.
			R-Hand	L-Leg	Sec. Wire	SL Bracket	120-240	Groundman	2.Tying in trans. neutral. Reached beyond line hose. Contacted sec.
			L-Hand	---	Pri. Wire	---	2400	Lineman	3.Completed work. Descending pole. Made contact.
			L-Hand	R-Foot	Pri. Wire	---	2400	Lineman	4.Dismantling pole. Crossarm tilted. Contacted pri. wire thought to be dead.
			R-Hand	R-Foot	Pri. Wire	Trans.Hanger	1200-2400	Lineman	5.Removing line hose without rubber gloves. Standing on trans. Contacted pri. wire.
			Hand	Hand	Grd. Wire	Grd. Wire	2400	App. Lineman	6.Took ground wire apart without rubber gloves. Completed circuit through body.
			R-Hand	R-Leg	Pri. Wire	Creo. Pole	2400-4000	Lineman	7.Reached up to move handline. Contacted pri. at uncovered insulator.
			L-Hand	R-Side	Pri. Wire	Neut. Wire	2400-4160	Lineman	8.Line hose separated from hood. Attempted to move line hose barehanded.
			Hand	Leg	Pri. Wire	Guy Wire	2400-4160	Lineman	9.Disconnecting lightning arrester for removal without rubber gloves.
		HANDS	L-Hand	R-Hand	V-Brace	Neut. Wire	2400-4160	Lineman	10.Replacing pole. Contacted energized V-brace. Rubber gloves not worn.
		26	R-Hand	L-Hand,R-Leg	Chain Hoist	Sw. Frame	2750-4800	Lineman	11.Installing gang-disc. Chain hoist contacted pri. Not wearing rubber gloves.
			R-Hand	L-Hand	Pri. Tap	Trans.Frame	6900	Lineman	12.Signalled to have circuit energized. Unbelted and started down pole. Made contact.
			Hand	Feet	Pri. Wire	Trans. Case	7200	Lineman	13.Standing on transformer with tie wire in hand. Wire contacted pri. riser.
		CASES	R-Thumb	L-Hand	Cutout	Guy Wire	6900-12000	Serviceman	14.Attempting to disengage hot stick from clamp, contacted top of cutout.
			R-Hand	L-Foot	Trans. Bush.	Neut. Wire	7200-12000	Lineman	15.Moving up pole. Contact made on transformer bushing.
			R-Hand	L-Foot	Fuse Holder	L-Climber	7200-12000	Lineman	16.Cut mousing wire from energized fuse holder without rubber gloves.
			Hands	Abdomen	Trans. Term	Trans. Case	6900-12000	Lineman	17.Changing tap in trans. without deenergizing transformer.
			Hands	Legs	Pri. Wire	Sec. Wire	6900-12000	Lineman	18.Installed comealong on wire supposedly dead. Wrong wire deenergized.
			L-Hand	Back	Dead End Clamp	Guy Wire	7200-12500	Lineman	19.Climbing into pri. area without rubber gloves. Made contact while belting in.
			R-Hand	L-Leg	CT Lead	Pole	7200-12500	Lineman	20.Checking burned open lead on current trans. Made contact with bare hand.
			R-Hand	R-Leg	New Wire	Sec. Neutral	7200-12700	Lineman	21.Installing new wire under pri. Wire raised up into hot pri.
			Hands	Feet	Trans. Bush.	Pole	7620-13000	Lineman	22.Shifting equipment. Contacted trans. pri. bushing alive from backfeed.
			L-Hand	L-Foot	Pri. Wire	Conduit	8000-13800	Lineman	23.Pulling slack in dead circuit. Pulled up into live circuit above.
			Hand	Foot	Pri. Wire	---	12000	Lineman	24.Replacing wire. New wire contacted old. Lineman working without rubber gloves.
			R-Hand	---	Conductor	Pole	33000	Lineman	25.Transferring line with hot line tools. Placed hand too close to conductor.
			Hand	Feet	Conductor	Guy Wire	19000-33000	Line Foreman	26.Hot line work. Removing tie wire from new insulator, end touched conductor.
			Arm	Feet	Sec. Wire	Guy Wire	110	Lineman	27.Installing guy wire. Reached over sec. wires. Perspiration soaked shirt made contact.
			R-Arm	L-Arm	Sec. Wire	Sec. Wire	110-220	Lineman	28.Descending pole. While passing secondaries made arm contact.
	LINE WORK		L-Arm	---	Sec. Wire	Pole	110	Lineman	29.Dead ended service wires on pole. Possible contact with sec.
	ON		L-Forearm	L-Leg	Pri. Wire	Sec. Wire	2300	Lineman	30.Reached over energized wire. Made contact. No rubber protection on wire.
	POLES		Upper L-Arm	R-Foot	Clevis	Guy Wire	2400	Lineman	31.Changing clevis on angle pole. Contacted clevis through bolt alive from pri.
		ARMS	R-Arm	L-Leg	Pri. Wire	Guy Wire	2300-4000	Lineman	32.Dead ending pri wire. Reached over uncovered live wire. Contact above rubber glove.
	68	19	R-Forearm	L-Foot	Pri. Wire	Sec. Rack	2300-4000	Lineman	33.Dead ending pri. wire. Reached over live conductor. Contact made above rubber glove.
			Upper Arm	Feet	Pri. Wire	Pole	2100-4160	Lineman	34.Tieing in pri. tap. Reached over to replace line hose. Made contact above rub. glove.
	CASES		R-Elbow	L-Leg	Sw. Blade	Sec. Neut.	2300-4160	Lineman	35.Installing switch from platform. Bracket touching sec. Brushed live sw. blade.
			R-Arm	R-Foot	Pri. Wire	Gr. Wire	2300-4160	Lineman	36.Reached over pri. to throw rope over dead 33KV line. Made contact.
		CASES	R-Elbow	Feet	Pri. Wire	Creo. Pole	2400-4160	Lineman	37.Replacing wire. While tieing in new wire made arm contact above rubber glove.
			L-Arm	R-Leg	Pri. Wire	Trans. Case	4600	Sub-Foreman	38.Changing dead-end. While removing clamp held wire in hand. Arm contacted conductor.
			L-Arm	L-Leg	Tie Wire	Alley Arm	2475-4800	Lineman	39.Transferring from old to new pole. Made contact with tie wire end.
			L-Arm	Feet	Pri. Wire	Guy Wire	6900	Lineman	40.In helping another man to belt in, took hold of pri. wire with bare hand.
			L-Elbow	R-Foot	Pri. Wire	Gr. Wire	6900	Lineman	41.Sleeving in pri. wire. Contacted adjacent wire.
			L-Arm	L-Leg	Pri. Wire	---	7200	Ser.Installer	42.Working on line recently changed from delta to wye. Error in identifying neutral.
			L-Arm	Feet	Trans.Riser	Sec. Neut.	6900-12000	Lineman	43.Descended pole to rescue a fellow worker. Contacted live trans. riser while belting in.
			R-Forearm	Feet	Pri. Wire	Gr. Wire	6900-12000	Lineman	44.Tieing in on insulator. Reached over insulator. Made arm contact above rubber glove.
			R-Elbow	L-Hand	Pri. Cutout	Gr. Wire	7200-12500	Lineman	45.Adjusting voltage. Elbow made contact on live lead which extended through cutout.
		SHOULDER	R-Shoulder	Upper L-Arm	Pri. Wire	Pri. Wire	1330-2300	Lineman	46.Changing insulator. Pulled wire down against shoulder while tieing in.
		4	L-Shoulder	L-Arm	Pri. Wire	Thru Bolt	2200-4160	Lineman	47.Linehose had slipped, exposing conductor. Climbed into conductor.
		CASES	R-Shoulder	Hands & Leg	Dead End Clamp	Neut.&Trans.	6900	Lineman	48.Belted in, leaned back in belt. Contacted dead-end clamp.
			R-Shoulder	L-Foot	Conductor	---	7620-13800	Lineman	49.Completed work on CT. Straightened up to unhook safety belt. Contacted conductor.
		HEAD	Side of Head	Feet	Cutout Lead	Pole	7200-12500	Lineman	50.Connecting sec. extension. Head contacted lead to cutout.
		NECK	Neck	R-Foot	Pri. Tap	Gr. Wire	2400-4160	Lineman	51.Stapling ground wire to pole. Back of neck contacted pri. tap.
ELECTRIC			Abdomen	Hands & Legs	Insulator	Guy&Gr.Wire	2400-4160	Lineman	52.Extending pri. Contacted faulty dead end insulator while removing safety belt.
		BODY	Back	Legs	Jumper	Pole	7200-12000	App. Lineman	53.Installed jumper on live line thought to be dead. No test made or grounds installed.
SHOCK		4	R-Side	R-Leg	Conductor	Guy Wire	7200-12000	Lineman	54.Replacing arm on angle pole. Untied wire which sagged into live circuit below.
		CASES	Back	R-Arm	Conductor	Gr. Wire	7600-13000	Lineman	55.Climbing new pole. Contacted live conductor on old pole.
OR		LEG	R-Knee	L-Hand,neck	CT. Lead	CT. Tank	2400-4160	Lineman	56.Adjusting St.Lt.Cir.Trans. on circuit crossed with pri. Contacted trans. lead.
	Contact Undetermined				Sec. Wire	---	120-240	Lineman	57.Climbed pole to remove line hose. Shifted position. Touched sec. Fell.
BURN	Contact Undetermined				Sec. Wire	---	120-240	Lineman	58.Completed work on pole. Still wearing rub. gloves. Called for help. Possible heart case.
	Contact Undetermined				SL Fixture	Tel. Cable	6000	Lineman	59.Shunting out St.Lt.Loop. Possible contact with fixture. Fell. Head hit curb.
	Contact Undetermined				Conductor	Steel X-Arm	19000-33000	Lineman	60.Completed work on dead circuit on tower. Made contact or caused flash on live circuit.
121	Contact Undetermined				Insulator	Guy Wire	39000-60000	Patrolman	61.Cleaning insulators on dead line. Attempted to work on adjacent live line.
	No Contact	Flash Burns					4000	Lineman	62.Preparing to phase out two feeders on pole. Cable riser blew up.
CASES	No Contact	Flash Burns					2400-4160	Lineman	63.Removing crossarm. Flash occurred. Reason unknown.
73-35	CUTOUT OR LOSS OF BALANCE	Back	L-Hand		Sec. Wire	Sec. Neut.	120-208	Lineman	64.Driving leg in pole. Slipped or cutout and fell into sec. service wire.
		---	---		---	---	Secondary	Lineman	65.Working near sec. became unconscious. No contact apparent, yet Dr. ruled electrocution.
		L-Arm	---		Pri. Wire	---	2300	Lineman	66.Reaching to put blocks on pri. Apparently cutout and fell into pri.
		L-Fingers	Foot		Trans. Lead	Pole	7200-12000	Lineman	67.Hook and pull--crossarm safety strap. Threw hand up to avoid falling.
	WORK IN BASEMENTS		L-Side	Back	Sec. Wire	Unit	120-208	Meter Supvr.	70.Reconnecting air-conditioning unit in Bldg. Supply energized before man was clear.
			R-Arm	L-Knee	Jumper Lug	Grd. Cabinet	129-220	Mechanic	71.Removing CT in basement. Contacted split lug on jumper.
	Fallen Wire		Head	Feet	Pri. Wire	Wet Earth	2400-2400	Lineman	72.Pri. wire down on garage roof. Cut wire clear head high. Wire slid down roof on head.
LINE	Fallen Wire		Hand	Foot	Pri. Wire	Earth	2300-4000	Lineman	73.Pri. wire down following storm. Picked up wire without rubber gloves.
WORK	Energ'd Truck		Base Spine	Feet	Truck Fender	Earth	6900	Line Foreman	74.Top of derrick contacted wire while foreman leaned on truck fender.
ON	Energ'd Digger		Hands	Feet	Truck	Earth	7200	Groundman	75.Setting pole hole digger. Boom touched wire. Groundman helping tel. wire over boom,shocked.

		Contact Undetermined			Insulator	Guy Wire				60.Completed work on dead circuit on tower. Made contact or caused flash on live circuit.
121		No Contact	Flash Burns				39000-60000	Patrolman		61.Cleaning insulators on dead line. Attempted to work on adjacent live line.
		No Contact	Flash Burns				4000	Lineman		62.Preparing to phase out two feeders on pole. Cable riser blew up.
CASES		CUTOUT OR	Back	L-Hand	Sec. Wire	Sec. Neut.	2400-4160	Lineman		63.Removing crossarm. Flash occurred. Reason unknown.
		LOSS OF	---	---	---	---	120-208	Lineman		64.Driving lag in pole. Slipped or cutout and fell into sec. service wire.
73.3%		BALANCE	L-Arm	---	---	---	Secondary	Lineman		65.Working near sec. Became unconscious. No contact apparent, yet Dr. ruled electrocution.
		5	L-Fingers	Foot	Pri. Wire	---	2300	Lineman		66.Reaching to put blocks on pri. Apparently cutout and fell into pri.
					Trans. Lead	Pole	2300-12000	Lineman		67.Pole cut with explosive safety strap. Threw hand up to avoid falling.
	WORK IN BASEMENTS		L-Side	Back	Sec. Wire	Unit	120-208	Meter Supvr.		70.Reconnecting air-conditioning unit in bldg. Supply energized before man was clear.
			R-Arm	L-Knee	Jumper Lug	Grd. Cabinet	120-220	Mechanic		71.Removing OT in basement. Contacted split leg on jumper.
		Fallen Wire	Head	Feet	Pri. Wire	Wet Earth	1200-2400	Lineman		72.Pri. wire down on garage roof. Cut wire clear head high. Wire slid down roof on head.
	LINE	Fallen Wire	Hand	Foot	Pri. Wire	Earth	2300-4000	Lineman		73.Pri. wire down following storm. Picked up wire without rubber gloves.
	WORK	Energ'd Truck	Base Spine	Feet	Truck Fender	Earth	6900	Line Foreman		74.Top of derrick contacted wire while foreman leaned on truck fender.
	ON	Energ'd Digger	Hands	Feet	Truck	Earth	7200	Groundman		75.Setting pole hole digger. Boom touched wire. Groundman helping. El. wire over boom,shocked.
	GROUND	Energ'd Gr.Wire	L-Hand	R-Foot	Gr. Wire	Earth	7200	Groundman		76.Setting pole with ground wire attached. Pole made contact with pri.
	9	Energ'd Wire	Hands	Feet	Ser. Wire	Earth	44000	Lineman		77.Installing sec. service under 44KV circuit. Service wire flipped up into 44KV.
	CASES	Energ'd Truck	R-Shoulder	L-Foot	Truck Box	Earth	7200-12400	Lineman		78.Moving hot pole line. Wire slapped truck boom. Lineman was leaning against truck box.
		Energ'd Truck	L-Arm	L-Foot	Truck	Earth	24000-41600	Lineman		79.Pulling pole with ground wire attached. Contacted live wire. Thrown against energized truck.
		Energ'd Gr.Wire	Hands	Feet	Gr. Wire	Earth	11000	Lineman		80.Removing gr. wire by pulling through staples from ground. Wire contacted conductor.
	CRANES	Energ'd Boom	L-Hand	Feet	Load on Boom	Earth	63800-110000	Rigger		81.Moving disc. sw. stored under line. Boom contacted line. Rigger guiding switch electrocuted.
	3	Energ'd Boom	Hands&Head	Feet	Load on Boom	Earth	63800-110000	Rigger		82.Same as 81.
	CASES	Energ'd Boom	Hands	Feet	Crane Bucket	Earth	2800-4800	Truck Driver		83.Guiding crane bucket. Boom contacted pri. wire.
			R-Hand	R-Hand&Feet	OCB Contact	Cubicle	2300-4150	El. Helper		84.Attempted to clean OCB contacts in cubicle while energized.
			Head	---	Bus	Steel Str't	2400-4150	Laborer		85.Covering deenergized trans. bushings for painters. Climbed beyond safe area. Contacted bus.
		ENERGIZED	Shoulder	Feet	Bus	Steel Str't	15300-26400	Electrician		86.Substa. Reconstruction. Came down from work area via I beam past live bus. Contacted bus.
		BUSES	L-Hand	Feet	Bus	Conc. Wall	33000	App. Electr'n		87.Building barrier wall around trans. Stepped over protective barrier. Contacted bus.
		8	Head	R-Foot	Bus	Meter Box	19000-33000	Line Foreman		88.Replacing blown fuse. Climbed up on meter cabinet. Contacted bus.
		CASES	Legs	Feet	Bus	Steel Str't	100000	Supervisor		89.Walking steel structure inspecting trans. Came too close to bus.
			(No Contact -	Flash Burns)			12000	Maint. Man		90.Slipped on ladder while handling hot stick with jumper. Jumper touched bus, causing flash.
			(No Contact -	Flash Burns)			13300-23000	Electrician		91.Wrench fell out of hand against bus. Sustained flash burns. No elect. contact.
			L-Shoulder	L-Knee	Pri. Wire	Steel Str't	2400	Lineman		92.Tapping line at substa. Walked across channel iron. Contacted line.
	AT	LINES	Hands	Feet	Conductor	Steel Str't	33000	Lineman		93.Transferring lines at substa. In pulling wire, contact made with live line.
		RISERS	Hands	Feet	Tube Cond.	Tube Bus	33000	Lineman		94.See no. 93. Climbed structure to help victim. Lost balance. Grabbed live conductors.
	STATIONS	LEADS	L-Hand	Body	Lead	Grd. Neut.	38000-66000	Electrician		95.Installing lugs on OCB bushing. Climbed up into energized area. Flash occurred.
		8	R-Arm	L-Arm	Line Cond.	Substa. Bus	Induced Volt.	Electrician		96.Working on dead 138,000 volt line. Removed gr. jumper. Completed circuit through body.
	ON OR	CASES	L-Foot	---	Riser	Steel Str't	125000	Lineman		97.Cleaning OCB. Climbed substa. structure before switching was done. Contacted riser.
			Hands	Feet	Riser Lug	OCB Case	44000	Maint. Helper		98.Testing OCB bushings and relays. Equipment released in error and reenergized.
	AROUND		Back	L-Leg	OCB Lead	OCB Frame	19000-33000	Line Supt.		99.Operating disc. sw. Lost balance and fell back into 33kV OCB lead.
			Neck	R-Thigh	Switch	Sta.-Str't	2300-4000	El. Mechanic		100.Disconnecting dead pot. trans. Moved up and contacted selector sw. above.
	EQUIPMENT		L-Hand	L-Foot	Disc. Lug	Channel Iron	2400-4160	Electrician		101.Either absentmindedly touched connector or lost balance & threw hand out & made contact.
			L-Hand &Body	Feet	Tie Wire	Reg. Tank	7200-12000	Lineman		102.Lowering OCB tank. Hung tie wire to be used to secure sling on energized disc. switch.
	BUS		Neck & Face	Hands	Disc. Clip	Disc.& Steel	8000-13800	App. Operator		103.Reading name plate on dead and grounded dis. Contacted live top clip of sw.
			Hands	Feet	Disc. Clip	OCB	12700-22000	Sta. Electr'n		104.Cleaning dead OCB on west bus. Attempted to wipe insulators on live side of disconnects.
	STRUCTURES	DISC.	Hand	Foot	Air Brk. Sw.	Sta. Str't	12700-22000	Lineman		105.Preparing to replace jumper on air swi tch. Contacted arcing horn on line side of switch.
		SWITCHES	Hand	Legs	Switch	---	19000-33000	Lineman		106.Completed cleaning insulators on dead switch. Absentmindedly started work on live switch.
	ETC.	14	---	---	Sw.Insul'tr	Sta. Str't	66000	Groundman		107.Painting steel substa. structure. Slipped and contacted switch. Burns.
		CASES	---	Feet	Switch	Sta. Str't	40000-69000	Service Mgr.		108.Walking past switch on cat walk. Contacted or started arc which set clothes on fire.
	38		Arm & Head	Feet & Legs	Switch	Steel Str't	66500-115000	Electrician		109.Walking to job on top of substa. Lost balance and grabbed hot insulator.
			(No Contact -	Flash Burns)			440	Sw. Bd. Oper.		110.Restoring welding circuit to service. Dropped fuse on switch. Short circuit and flash.
	CASES		(No Contact -	Flash Burns)			2300	Electrician		111.Wiping salt deposit from disc. sw. Fault developed on an adjacent circuit. Flash.
			(No Contact -	Flash Burns)			2300	Asst. Engr.		112.Used 230UV sw. with 500V test lamp. Burned by resulting flash.
			(No Contact -	Flash Burns)			13200	Operator		113.Gang disc. sws. flashed over when operated. Error made in switching procedure.
			Back	R-Foot	Arrester	Cr. Platform	6900-12000	Line. Helper		114.Helping to erect ladder at substa. Backed into pedestal type lightning arrester.
			Hand	Back	React. Term.	Conc. Pad	9280-16000	Electrician		115.Cleaning deenergized reactors. Made contact on adjacent live reactor.
		MISC.	R-Hand	L-Foot	Trans. Bush.	Trans. Case	22000	Serviceman		116.Changing taps in trans. One blade of gang disc. failed to open leaving trans. alive.
		EQUIPMENT	R-Hand	R-Leg	Trans. Bush.	Trans. Case	13200-24000	Substa. Oper.		117.Wiping off deenergized trans. top. Stepped or fell over on top of adjacent live trans.
		8	R-Hand	L-Hand,Feet	OCB Bush.	OCB Frame	19900-34500	Asst. Supt.		118.OCB deenergized for work. Went after more equipment. Returned and touched adjacent live OCB.
		CASES	Body	Knees	OCB Term.	OCB Case	44000	App. Electr'n.		119.Making visual inspection of OCB. Came too close to live bushing.
			R-Hand	L-Hand	Pothead Cap	Pothead	1500-2300	Electrician		120.Taping lower pothead gasket on cable. Removed rub. gloves. Contacted pothead term. cap.
			Hands	L-Leg	Meter Box	Wire Fence	2400-4160	Truck Driver		121.Inspecting meter disc while standing on fence. Box slive from defective pot. trans.
								Lineman		122.Passing safety belt around pole. Relaxed grip on pole. Fell to ground.
		FALL FROM POLE OR TOWER						Serviceman		123.Climbed pole to check trans. Snow and wind. Not an expert climber. Fell.
	LINE WORK							Lineman		124.Descending pole. Pole step adjacent to woodpecker hole broke out. Fell.
	ON	7 CASES						Cable Splicer		125.Descending pole. Lost grip on pole step. Fell to ground.
	POLES							Lineman		126.Belting in on pole to change from leather to rubber gloves. Fell to ground.
	OR TOWERS							Lineman		127.Swung around pole while descending. Gaff cutout. Fell to ground.
FALLS	13							Lineman		128.Belted in and climbed ice covered pole. Changed position. Cutout and fell.
	CASES	FALL WITH POLE						Lineman		129.Earth had been graded from pole. Untied pri. wires. Pole fell with man.
21								Lineman		130.Stripping pole of wire. Cut wire. Pole fell with man.
		5 CASES						Lineman		131.Straightening pole. Pole broke off at ground when pulled. Fell with man.
CASES								Lineman		132.Shifting wires from old to new pole. Guy broke allowing pole to fall with man.
								Lineman		133.Climbing pole marked for replacement. Pole broke off at ground. Fell with man.
12.8%		FALL FROM LADDER						Asst.Lineman		134.Changing St.Lt. lamps. Lost balance and fell to ground.
		FALL TO FLOOR						El. Operator		135.Installing hold-off tags after completing switching. Fainted or slipped. Head struck floor.
		FALL TO BASEMENT						Coal-Ash Man		136.Fell through un-barricaded opening in floor. Fell to conc. floor in basement.
	AT	FALL FROM SCAFFOLD						Carpenter		137.Fell from scaffold. Distance of 72 feet.
	STATIONS	FALL FROM SHELF						Mechanic		138.Hooking chain hoist on I-beam. Slipped from shelf or lost balance and fell to conc. floor.
	8	FALL FROM WALKWAY						El. Foreman		139.Crossing walkway. Plank became displaced. Fell to ground.
	CASES	FALL FROM GIRDER						Lineman		140.Climbed substa. structure to remove dead-end clamps. Lost balance or blacked out and fell.
		FALL DOWN PENSTOCK						Foreman		141.Preparing penstock interior from skip. Fell from skip and slid 140 ft. down penstock.
		FALL FROM TRANSFORMER						El. Mechanic		142.Testing bushings with pf. insulation tester. Electrical contact doubtful. Fell to ground.
		COLLISION ON HIGHWAY						Lineman		143.Co. truck traveling at 40m.p.h. on highway. Struck in rear by car. Thrown out.
		COLLISION ON HIGHWAY						Laborer		144.Employee's car struck head on by oncoming car which was passing a truck.
MOTOR	ON	COLLISION ON HIGHWAY						Sta. Foreman		145.Co. truck skidded on icy road into path of approaching truck.
VEHICLES	HIGHWAY	CAR LEFT HIGHWAY						Indust.Engr.		146.Pick up truck left road, overturned, and pinned man under cab.
8	7	STREET AT R.R. CROSSING						Meter Reader		147.Car crossing R.R. at gate crossing. Watchman failed to lower gates. Struck by train.
CASES	CASES	INTERSECTION COLLISION						Patrolman		148.Co. truck struck by car which had gone through stop sign.
4.9%		CURVE						Line Foreman		149.Co. line truck overturned at curve. Probably due to excessive speed.
	IN YARD	TRACTOR						Fuel Handler		150.Operated tractor too close to edge of coal pile. Overturned.
STRUCK	TREE FELLING				Tree Branch			Tree Faller		151.Felling tree. Broken branch fell on man's back.
BY	TREE FELLING				Log			Timber Faller		152.Dragging log with tractor. Log kicked up crushing man against boulder.
4 CASES	LINE WORK				Gin Pole			Groundman		153.On ground tightening tower bolts. Others raising gin pole. Pole fell on man's head.
2.4%	LINE WORK				Gin Pole			Laborer		154.Lowering gin pole. Truck backed into and broke tag line. Pole fell on man's head.
CAUGHT IN	STATION				Coal Conveyor			Laborer		155.Taking coal samples from belt conveyor. Arm caught between pulley and guard. Arm severed.
0.6%										
BURNED	STATION				Coal Gas			Coal Handler		156.Overheated coal gas in bunker exploded. Source of ignition unknown.
4 CASES					Coal Gas			Coal Handler		157.Same as 156. Double fatality.
2.4%					Flame From Furnace			Ash Handler		158.Tending ash pit. Fall of slag caused rush of flame which set man's clothes on fire.
	STATION				Hot Ashes			Laborer		159.Washing down ashes inside ash hopper. Hot ashes fell on man.
					Pulverized Coal			Helper		160.Punching coal down chute. Fell into bunker. Buried in coal and suffocated.
SUFFOCATED	ROAD AT RIVER				Flood Waters			Local Repr.		161.Walking along flooded road. Swept off feet by rushing water.
AND	ROAD AT RIVER				Flood Waters			Lineman		162.Crossing flooded area in truck. Truck slid off road into swift water.
DROWNED	RIVER AT DAM				Flood Waters			Lineman		163.Same as 162.
6 CASES	RIVER AT DAM				Barge Sank			Laborer		164.Hauling stone on barge. Wind caused waves to swamp barge. Drowned swimming to dam.
3.6%	RIVER AT DAM				Barge Sank			Laborer		165.Same as 164. (Both men excellent swimmers.)

Compiled for E.E.I. Accident Prevention Committee
By S. H. Young

number in the 11-year period and equalled only in 1948.

These summaries present a challenge. Can we not learn from the experience of the past where greater effort must be directed in the future? Can we review the circumstances surrounding 165 accidental deaths without discerning what must be done if accidents are to be prevented? We know the reasons why these men died. We have known the reasons for years. The accident pattern has been the same for 11 years and the chart proves it.

This is not a game of chess where each must take his turn moving. We must all move together. So, Mr. Worker, Mr. Foreman, Mr. Supervisor, Mr. Safety Engineer, Mr. General Manager, Mr. President, it is your move.

ELEVEN YEARS OF FATAL ACCIDENTS IN THE ELECTRIC LIGHT AND POWER INDUSTRY, 1941 to 1951, INCLUSIVE
(From EEI Accident Prevention Committee Summaries)

Year	Total	Electric Shock or Burn	Falls	Motor Vehicles	Struck By	Caught In Burned	Caught In	Drowned	Miscellaneous
1941	121	90	11	8	4	2	3	1	2
1942	121	81	19	11	6	3	0	0	1
1943	117	81	14	3	7	5	1	3	3
1944	82	62	6	5	6	1	2	0	0
1945	116	79	14	6	5	4	3	3	2
1946	105	68	19	8	5	0	2	2	1
1947	173	125	20	8	13	3	2	1	1
1948	149	102	21	13	6	2	2	0	3
1949	176	134	16	13	6	1	5	1	0
1950	141	102	13	9	4	4	0	5	4
1951	165	121	21	8	4	4	1	5	1
Total	1,466	1,045	174	92	66	29	21	21	18

DISTRIBUTION OF ACCIDENT TYPES
(By Percentages of Total Accidents)

	11-Year Average	11-Year Range Minimum	11-Year Range Maximum
Electric Shock or Burn	71.3	64.7	76.0
Falls	11.9	7.3	18.1
Motor Vehicles	6.3	2.6	9.1
Struck By	4.5	3.3	7.5
Burned	2.0	0	4.3
Caught In	1.4	0	2.8
Drowned	1.4	0	3.5
Miscellaneous	1.2	0	2.4

Company Narrowly Misses Safety Merit Award for Second Time, Determines to Try Anew

THIS is a story of noble aspirations, clung to despite events discouraging enough to eclipse the vision of a goal from the sight of less determined people. In a sense, it is a story of triumph without victory as yet, for certainly there is triumph in effort commendable enough to inspire fellow-workers in the industry, even if that effort has not accomplished its own aim.

For the past few years, the approximately 1,000 employees of a midwestern electric company have carefully worked to establish a record of 1,000,000 man-hours free of disabling injury, thereby complying with requirements for the Institute's Safety Merit Award. The effectiveness of their safety program was demonstrated by the 973,680 man-hours which the employees had totaled when a disabling-injury accident on March 31, 1949, blocked them from their goal.

Despite their disappointment, company officials and employees determined to try anew. They retained their determination even when subsequent efforts fell short of their own 1949 record.

However, last fall accident-free hours again reached an impressive total. Early 1953 saw the previous record bettered. In late January, the employees justifiably felt the goal was in sight.

Then it happened again. On January 30, as a young employee walked down a private driveway which was thinly coated with ice, he slipped and injured his ankle, thereby halting the safe man-hours at 997,019—less than one-third of one per cent short of the goal.

In an effort to inspire a successful new attempt at the 1,000,000-man-hours mark, the company's superintendent of inspection and safety immediately wrote safety letters to all division managers, district managers, department heads and plant managers. His appeal for both off-the-job and on-the-job safety emphasized how narrowly the company had missed the coveted Safety Merit Award by pointing out, "On a 100-yard football field, that would mean we'd have been embarrassed within 11 inches of a touchdown. On a 100-mile journey, it would mean we came within three blocks of our destination and then crashed."

Although the Institute cannot present its Safety Merit Award to the company for the latest record, it hopes that a presentation can be made for a successful completion of the company's current efforts to reach the 1,000,000-man-hours goal.

Accounting Directory

A JOINT project committee of the EEI-AGA Customer Accounting Committees has prepared a *Directory of Customer Accounting Methods and Equipment* in connection with the committee's project assignment, a summarization of which was presented at the National Conference of Electric and Gas Utility Accountants in Chicago, Ill., April 20-22, 1953.

A reference manual designed to present concisely the principal customer accounting methods and equipment used throughout the industry, the directory is intended to provide a basis for comparison by companies operating under like conditions and to point out the practices and trends within such groups.

Copies of the directory have been mailed to each of the companies which responded to the questionnaire. A limited number of additional copies are available and may be had upon request to the Edison Electric Institute.

Today and Tomorrow in Our Industry

B. L. England

President, Edison Electric Institute

An address before the 19th Annual EEI Sales Conference, Chicago, Ill., April 1, 1953

SELLING is an art—stimulating and exciting—and I view my own years in the sales field as being extremely valuable and enjoyable. Selling is, after all, not only the builder of revenues, but a basic key to electric service. All of our phenomenal technical achievements in power supply and application would have little or no practical value to civilization if it weren't for the fact that selling has brought their wholehearted acceptance in homes, farms, factories, and businesses throughout the land. Electricity does not become electric service until a customer actually benefits from its use.

The development of our electric service industry has been of amazing magnitude and rapidity. The United States Department of Commerce recently noted that "Electric power output has been growing three times as fast as the average (growth) for all industries, or close to 10 per cent annually since 1900." In other words we more than double our output about every ten years.

Rapid Rate of Advancement

In just one decade, from the end of 1945 to the end of 1955, the electric industry will have more than doubled its generating capacity, from 50,000,000 kw to about 115,000,000. And during that ten-year span, the electric companies, installing by far the greater part of the new capacity, will have spent about $20 billion on new construction—$7½ billion more than their entire investment in plant and equipment at the end of 1945. We are, in essence, putting what amounts to two electric industries where one stood.

At the rate we're advancing today, we can positively expect that only ten years hence we will have achieved in new power supply facilities, the equivalent of all that provides electric service now, after some 70 years of development.

What does this mean to the salesman, who is responsible for building the revenue which makes it possible for the engineering and financial people to provide the new plant and equipment? It means that he has the biggest job of all. Barring drastic changes on the national scene brought on by war or unusual economic conditions, he must double our electric load, which amounts to doubling our industry's business.

By 1963, on a per-customer basis, the average annual residential use should reach about 5,000 kwhr, average commercial use about 20,000 kwhr, and farm use 7,200 kwhr. Translate these statistics into the vast quantities of refrigerators, TV sets, electric ranges, lighting layouts, electric furnaces, milking machines, and other appliances and applications which must be sold to bring about such a doubling of load, and you get an idea of the immensity of the job ahead.

Our industry's expansion of facilities has been carefully planned to meet any foreseeable requirements of peace or war. It is equally important that our selling activities be planned in advance to allow for a wide variety of economic possibilities. The larger a company plant becomes, the more important becomes the sales organization, which must be able to bring about the profitable utilization of the plant's capacity, no matter what the conditions are. This calls for a high degree of alertness, flexibility, and skill on the part of our sales forces.

Electric company managements believe that the money invested in sales promotion, advertising, sales training, and specific selling drives are as fundamental to successful operation as the cost of fuel. It could even be argued that money invested in selling is more important than almost any other operations expense. This was certainly true in the formative days of our industry. No one could begin to operate an electric company unless he were reasonably sure he was going to sell the output.

In general, then, the salesman can be said to hold the key to the proper fulfillment by his entire electric company organization of its responsibilities to the stockholders, employees, and above all, to the public.

His relationship to the first two groups is relatively simple, but no less vital. Without his successful conversion of kilowatthours into cash, it is clear that stockholders would receive little or no earnings, employees little or no wages.

The salesman's public responsibiity is more complicated than it might appear. First of all, he bears a major share of the electric industry's educational obligation to the American people. As fast as new developments come into practical application, it is his mission to bring to the attention of his industrial, farm, and home customers what these advances can mean to them. In particular instances, especially among industrial establishments, his message, effectively transmitted, may be practically a life-and-death matter, making the difference between a prosperous, efficient business enterprise, and a failing concern.

Economic Responsibility of Salesmen

This touches on the economic responsibility of the salesman of electrical living. Ours is an electrical age, and our economy has electric power as its basic energy. Our sales efforts not only affect employment and business conditions in the utility and appliance manufacturing industries, but, by increasing efficiency in other businesses and promoting new developments, they foster economic strength in a myriad of enterprises and help in the creation of new businesses. Our contribution along this line is particularly important now, as we look ahead to the time when our civilian economy must fill in the gaps which may be left by a declining defense economy.

Further, salesmen are among our primary contacts with the public and have a most effective role in making friends for our industry. Their contacts with the different phases of community life, their continually demonstrated friendly interest in offering electrical methods to help in earning a better living or enjoying a pleasanter

home are most valuable in humanizing the electric company for the people it serves and in gaining their support.

Electric companies, through public franchise and approval, occupy unique positions in their communities and in the nation. This gives increased emphasis to the considerations mentioned previously. An electric company cannot allow indifference, poor treatment, or uncooperative attitudes which might give customers the impression that they would do better if they could get their electric service elsewhere. Not only would such a condition retard the progress of electrical living, it would threaten the company's existence and effect detrimentally the entire free-enterprise electric industry.

Fortunately, we are well aware that the nature of our service ties electric companies irrevocably to their communities. Consequently, their selling activities, like other phases of operation, are closely tailored to community conditions, needs, and development. Firmly convinced as we are that the electrical way of doing things promises the best in business prosperity and good living, electric companies must sell their product and its applications, if their communities are to advance and if the companies are to advance with them.

These are basic considerations in a management view of the sales function. What are some of the principal factors that sales organizations must consider in the successful fulfillment of their functions now and in the future?

Creative Selling

As we have noted, the sales job is bigger today than it has ever been and promises to go on expanding limitlessly. It must go on growing, if the people of America are to progress and prosper as individuals and as a nation. We have reached the point where the development of ways in which electricity is able to serve and their incorporation into the fabric of American life are practically synonymous with the forward steps of our civilization. Selling of the most creative kind is needed, if this vital movement is to continue at the best possible rate.

The size and significance of this task call for the most whole-hearted and imaginative cooperation among the salesmen of electrical living, from all segments of our industry and on all levels, local or national. The Edison Electric Institute, National Electrical Manufacturers Association, National Association of Electrical Distributors, and National Electrical Contractors Association have long recognized that cooperation in selling will produce the maximum effects in furthering electrical living.

Typifying the electric companies' highest aims in doing a good selling job are the more than 300 members of the EEI Commercial Division's 20 committees. From all over the nation, they bring to committee councils their expert knowledge, their enthusiasm, and a capacity for hard work. They, along with their counterparts in the other electrical industry groups and associations, have made distinct contributions to the splendid electric industry record.

The individual electric company logically has a leading role in its community for cooperative sales and promotional programs. Its activities function as a foundation for the programs in its area of electrical manufacturers, distributors, wholesale and retail dealers, and contractors. The activities of all these contributors to electric service should be developed into a harmonious and effective structure, in which the sales efforts of each fit into or complement the programs of the others.

This is a particularly advantageous time for the electrical living salesman to give close attention to the effectiveness of cooperative endeavors. The time may soon be at hand when the efficient and economical sales activities which can be developed in conjunction with others will be highly important to the continued success of local electrical enterprises. Preparations for selling in high gear must be made now—any lag between the decision to put real pressure on sales and the ability to do so may be costly indeed.

I don't want to give the impression that our best selling efforts must wait for a future time. A number of factors favor aggressive selling now, and selling that is done today has a most important bearing on tomorrow. If our present campaigns and promotions convince a customer that she should buy an electric range rather than some other kind, the electric company's revenues will show the good effect of that purchase for years to come. If selling now speeds the proper modernizing of stores, farms, and factories, the results will be found in the electric company income account for a considerable period. There is this consideration, too — modernizing through proper electrification may be easier to sell now than it might be in the future, with changed economic conditions.

There are two principal factors which make today a wonderful time to be working on our ten-year job of doubling load. First, appliances and electrical applications generally have never before existed in such variety and quantity as they do now. Second, the nation is at an exceptional level of prosperity. Full employment, healthy savings bank accounts, and high business activity all point to the fact that customers have plenty of money to invest in electrical ways of living and doing things.

A Catalytic Agent

The salesman is the catalytic agent which can turn these conditions of money supply and product availability into new advances in American homes, farms, and business, and into revenues for his industry. His is the major challenge.

Many of the means by which electricity can serve today were making no significant contribution ten years ago, when the industry's annual electric generation was about half the present 400-billion-kilowatthour output. In the residential field, refrigerators, radios, washing machines, and lighting were at the head of the list of applications achieving the greatest customer response. Today, television leads them all, and the list includes a host of other appliances gaining widespread customer acceptance and coming into their own—electric range, dishwasher, dryer, freezer, room air conditioner, and electric blanket—for all practical purposes, unheard of only a decade ago.

As a matter of fact, there has been a tremendous surge in customer acceptance of electrical living in the eight years since World War II. With practically every activity in our civilization relying at some point on electric service, an overwhelming majority of Americans are convinced of its worth and are ready to adopt new ways in which electricity can benefit them.

Among industrial customers, it is heartening to note that the isolated power plant is no longer the competitive hurdle it once was. Economy and

efficiency lie with central station electricity supply, and the fact has become generally recognized. As for applications, the vista is dazzling. You may have seen the handsome advertisements inserted in a number of national magazines by General Electric Co., now celebrating its 75th anniversary. Shown are such developments as the 70-mph coldstrip-mill drive (Fairless Works on the Delaware River), X-ray thickness gage, and the electric furnace, which indicate how far we've come in recent years, and only hint at the marvels ahead.

A tremendous commercial market is on the horizon, with cooking, better display and office lighting, and air conditioning in positions of importance.

In the farm field, electrical applications number some 200 or more, and the salesman is faced with a big job and a great opportunity to put these and applications yet to come where they will contribute most to the prosperity of the individual farmer and the agricultural benefit of the nation, as well as to the revenue accounts of his company.

Predictions for Tomorrow

We can, by logically extending the scope of services already being rendered and immediately in prospect, foretell that the farm using 50,000 kwhr annually, nearly 18 times the present average, will become commonplace; that electrically operated automatic factories will be able to perform production miracles; and that homes with all-electric kitchens, color television, and year-round climate control, will be using 25,000 kwhr annually, about 12 times today's average.

I certainly don't say that all this will happen in the next decade, or in the decade after that. But I can cite an example or two which should make these predictions for tomorrow seem less fantastic.

In Atlantic City Electric's service area, near Hammonton, N. J., Anthony Rizotte has a farm which he has owned for 43 years. Electric service first meant lighting to him, then the additional benefits of a refrigerator, a water system and other small appliances. Now his sweet potato beds are heated in the spring with electric soil heating cable; a cold storage house capable of storing about 14,000 bushels of fruit is power-operated; his fruit is graded and polished by electrically driven machinery; and he has a fully equipped farm repair shop. He states that if it were not for the electric service, it would be impossible to grade and pack the large tonnage of produce that is raised on his farm so economically. There are still many ways in which electricity can serve Anthony Rizotte, but nevertheless his annual energy consumption now amounts to about 36,000 kwhr. And in our "Garden State" of New Jersey we do have farms using as much as 69,000 kwhr.

Down in Winchester, Va., Ed Molden, an electrical dealer, decided he had worked in electricity long enough and made electricity work for him. He now lives electrically in the real sense of the word.

Mr. Molden pushes a button to raise or lower his windows, electricity melts the snow off his driveway, he has a walk-in deep freeze in his basement, television outlets in every room, air conditioning throughout, an intercommunications system connecting any room, besides the usual all-electric devices. What this man has done is to give the rest of us a peek into what electrical living means.

These are glimpses of a future which will not come by itself. It will come as the result of the exercise of free imagination, inventiveness, and ingenuity. This is a point I particularly want to emphasize, because so much depends on initiative, alertness, ability to grasp possibilities and to develop entirely new ones. Our whole industry is actually the development of what was once considered a wild figment of an individual imagination. We must not only be prepared to be surprised by things to come; we must continue to be able to conjure up surprises ourselves. We must remember, and consider in the light of the future, the fact that the miracles of service now being performed by electricity and being taken for granted were unthinkable not so long ago.

To pave the way for the fulfillment of the future, the salesman of today may be called upon to exhibit unusual flexibility and selling know-how, if there should be any drastic change in the economic picture. With this in mind, it is shocking to some of us pre-World War II salesmen to realize that very few salesmen in their twenties or early thirties have ever sold in a really hard market. On these front-liners much will depend, in the event of a down trend. If these men are to be able to function at full effectiveness in any situation, the process of training them and strengthening their sales abilities must be a matter of prime concern in our industry.

The sales challenge facing us, therefore, is a broad and important one. To help in meeting it, there are a number of excellent activities which have been developed on the national level for local assistance. Among them are EEI's Sales Training Program, Planned Lighting Program, the new Electric Water Heating Program, and a number of other promotional programs conducted in conjunction with other electrical industry organizations such as the Electric Water Systems Council and the Better Light-Better Sight Bureau. Just starting is an activity which is another example of the increased emphasis on cooperation within the industry, the EEI-NEMA April-May Electric Range promotion, in which manufacturers, distributors, electric companies, and dealers will work together at the same time to boost electric range sales.

Public Information Activities

Quite apart from selling activities, in the public information sphere, electric companies are engaging in an Electricity for Better Living Program this year, marking the unexcelled standards of living we have in the American home as a result of the use of electricity. It seems to me proper that we should be pointing out the benefits that have come to the American home as a result of our constant supply of cheap power to take away the tedium and drudgery of the chores.

It has been determined that electricity used to replace the manual chores of the home, such as washing and ironing and sweeping, takes the place of six servants working a 40-hour week. This brings into dramatic focus the standards of good living that we are reaching in the American home.

Whether, in our actual selling efforts, we are trying to reach homes, industries, businesses, or farms, we will need increasingly efficient methods if we are to double our load in the next decade. Perhaps the greatest opportunity for the more effective use of the salesman's time and talents will result from increased attention to "mass selling."

By mass selling, we can prepare a vast market through extensive adver-

tising in newspapers, on radio, and particularly on television. Unavailable before World War II, TV's potent force has already been demonstrated as an extremely valuable selling tool. By its use, and by the use of other advertising media, we can present carefully planned and dynamic messages designed to acquaint the customer with new contributions to electric service, and predispose him towards their inclusion in his pattern of electrical living.

With the groundwork already laid in this manner, valuable time and effort are saved on the part of the salesman, who can then concentrate on closing the sale of what the customer has already felt that he wants.

Let me emphasize what you all know—that the mere fact of customer desire does not mean that the customer is going to buy. In competition with all the other attractions for the customer's dollar, the electrical salesman must utilize a high degree of skill, knowledge of the customer's needs, and a whole combination of indefinables which must be called good salesmanship, if he is to turn that desire into an actual sale of electric service. Mass selling through advertising will help step up the accomplishments of the salesman, but never take his place.

After this outline of some of the important specifics which will have bearing on the successful carrying out of salesmen's primary responsibilities, I would like to emphasize the fact that, despite our careful attention to our own field of operation, we must never lose sight of the overall picture. We must maintain a constant awareness of the changes and influences around us which may have great significance for our industry's future.

An outstanding development, of course, has been the new atmosphere in our government, brought about by the election. This change in political climate, even though called for by an unprecedented number of American voters, entails soberest consideration of new responsibilities and opportunities for service.

No assessment can yet be made of the effect of this change on electric industry problems, but it seems certain that a thorough re-examination of government policies and practices in all fields will include the Federal power program, which, for 20 years, has been driven in the direction of nationalization of our industry.

It is to be hoped, for example, that the development of the nation's water resources will proceed with more objectivity, more attention to the economic balance of costs and benefits, and with less ideological distortion than has been true in the last two decades.

Further, private capital may be given increased opportunity to aid in the development of hydro power facilities, and there should be a sharp reduction in obstructionism by agencies whose recent policies seem to have been directed at building a government power empire at the taxpayers' expense.

It can be reasonably assumed that, for the first time in two decades, electric company efforts in the public service will be viewed by a national administration on merit rather than on the basis of political doctrine or bureaucratic prejudice. This increases, rather than lessens, the heavy sense of responsibility which all of us in electric company organizations must feel in planning programs and policies for the years ahead, and in no way reduces the need for continuing approval on the part of the people of the nation.

Atomic Energy Developments

We have had several recent examples on the national scale of how electric companies are prepared to discharge their obligations as good citizens. Late in 1950, the five-company Electric Energy Inc. was organized to build a 1,000,000-kw steam station to serve an Atomic Energy Commission plant. Just last year, 15 electric companies formed the Ohio Valley Electric Corp. to construct some 2,000,000 kw for another huge atomic energy installation.

In the field of natural resources, perhaps the most impressive electric company effort is the Niagara Falls redevelopment program, offered by five New York State companies for Congressional approval.

Such positive plans and accomplishments not only have value in themselves, but are the best kind of evidence to prove that individual enterprises in a free economy can carry out large-scale projects for the benefit of all, with tremendous savings of taxpayers' money.

In this period of big government, people are more and more favorably impressed by electric company attitudes and actions along these lines. Disillusioned as they have shown themselves to be with all-pervading government operation, Americans welcome programs and accomplishments which demonstrate that their economic system has the vitality to undertake such natural resource developments, and that there is no need to sacrifice freedom or tax dollars to a centralized bureaucracy for them.

The time may not be far distant when Federal power operations will be taxed and will have to pay their full costs, as huge Federal expenditures continue to burden individuals and businesses, and Congress finds it necessary to expand the tax base and close the loopholes. When financial responsibility is made a condition of Federal power project operation, the preference clause in favor of local governmental power systems and cooperatives will lose its advantage. Without subsidy, most government power will be more expensive than power produced by the companies.

After all, it was not government that brought forth the electrical age and all that it signifies, but the inspiration and efforts of free men working in an atmospere of freedom. Ours is an industry built upon the principle of service, a principle given little recognition in those lands where nationalized power systems prevail.

Electric power in America is a servant of a free society, not a tool of a master government. This is an essential difference which we must maintain vigorously. I can think of no one who is in better position to demonstrate that difference than the salesman of electrical living. Through his activities, he is in constant contact with the people we serve, and he actually comes to represent in his own attitudes and actions what electric service and those who provide it stand for.

The interests of the customer must always be present in the salesman's mind. Helping the customer must be the basis of every selling action, organizational or personal, and selling should be carried on so that the customer is fully aware of the sincerity and fundamental quality of our concern for his welfare and advancement. If we continue to do this, we shall continue our unparalleled progress, buttressed by the faith and confidence of people who use our electric service and believe in it and us.

Along this line, we shall have a

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Rural Market Opportunities Unlimited

E. O. George
Manager of Sales, The Detroit Edison Company

An address before the 19th Annual EEI Sales Conference, Chicago, Ill., March 31, 1953

A FIRST glance at the rural market for 1953 would seem to disclose only problems and obstacles such as declining farm prices, rising costs of equipment and labor, and increasing pressure of competition. But the rural service department of every electric company must look beyond these obstacles to see the challenges. More than any other part of the company sales force, the rural service department must convert these challenges into opportunities.

It seems to me there are three great challenges which face us now. Most pressing is one which hit the headlines in January—declining farm prices. Another challenge, not quite so much in the headlines but facing us just as squarely, is the rising cost of farm equipment and labor. And a third challenge that has never hit the headlines is the increasing pressure of competition.

If we bravely accept these challenges we will make them into opportunities by helping the farmer to use electricity to save more of what he has produced; to use electricity to improve his marketing position; and to use electricity to save labor.

A comparison or two with industry will serve to illustrate several of these situations. For example, the steel industry last year produced about 100,000,000 tons of steel. We think that is good, and by any set of standards it is very good. One hundred million tons *is* a big amount, and steel *is* a big industry.

But, while the industry was producing 100,000,000 tons of steel, American farmers produced over 100,000,000 tons of hay, plus over 100,000,000 tons of small grain, and, in addition, over 100,000,000 tons of corn. This is three times the tonnage of steel without considering numerous other farm products such as cotton, tobacco, beef, sugar, and potatoes. Agriculture is indeed America's biggest industry and has the biggest opportunities.

Let's take a look at the challenges again. All of us are quite aware of the first—declining farm prices. And we are familiar with the second—rising cost of equipment and labor. We know, for example, that the cost of farm labor has nearly tripled in a little more than ten years.

However, the third challenge—competition—is more vigorous and lively, though perhaps not as deadly as the other two. Many people would have us believe we have no competition. One of our most aggressive competitors is the petroleum industry. In direct competition with us, this young industry has built up a hard-swinging sales force to dispose of its LP gas. Thirty years ago this saturated hydro carbon was a wasted by-product of the industry, but in 1951 4,000,000,000 gal were marketed. Better than 70 per cent of this production of LP gas was sold for motor fuel and domestic use, and the remaining 30 per cent successfully competed against us for our industrial customers. On the farms, LP gas is used for water heating, milkhouse heating, home heating, for chicken and turkey brooding, tractor fuel, refrigeration, clothes drying, and cooking.

The LP gas people claim that 16 per cent of all farms use their product for cooking. The believe their domestic market is mostly rural and that we are their strongest competitors. Using every promotional technique, they are going after a greater share of rural sales. Through advertising in national farm papers alone they claim they reach 13,000,000 families each issue. This is exclusive of state and local papers and direct-mail advertising.

Their distribution system is very effective. They have distributors and dealers in every rural area. Nearly always the distributor is also an appliance jobber. The combination of selling the appliances and supplying LP gas provides a dual incentive, with interlocking opportunities for profit.

We must out-point and out-fight all our competitors by taking advantage of every opportunity to serve the farmer better. We believe the best way to meet competition is to give better service than our competitors can give. We do not want to meet and we cannot meet competition on the basis of kilowatthour alone or on price alone. To survive, we must serve the farmer better than any other agency or competitor. How can we do this? First, we can help him save what he produces.

As was stated, farmers produced 100,000,000 tons of hay last year. Startling though, is the fact that 25,000,000 tons of this same hay was waste, wasted because of improper handling and lack of cooperative weather. Rain and sunshine at the wrong time depleted the hay of its nutrients so that the farmer lost all he had invested in labor, in machinery, in fertilizer, and in land.

Just in passing, let me ask what would happen to the steel industry if it lost 25,000,000 tons of steel?

But, let's get back to the farmers. Here is a real opportunity to help them save more of what they produce. Let's show the farmers how to save the hay by using hay driers. If we can show them how they can save 25,000,000 tons of hay, at a value of about $500,000,000, don't you think farmers will be glad to use $1.00 worth of electricity per ton?

With corn it is almost the same story. The farmer produces 100,000,000 tons and then loses about 20,000,000 tons for almost the same reasons—improper handling and harvesting, uncontrollable weather conditions, and unsatisfactory storage conditions. Here again, using electricity to properly dry corn, we can help the farmer save these 20,000,000 tons and prevent the loss of what he has invested in labor, machinery, fertilizer, and land. The situation is the same with regard to small grains. We have unlimited opportunities to help the farmer improve harvesting, handling, and storage and thus save more of what he produces. I think we can do it better than our competitors.

Here's a second opportunity. Let's help the farmer hit the high spots on the market instead of the low spots. Just as an example, one farmer in our area who raises green onions was always plagued by the fact that on certain days—the days he had onions ready for market—the demand for onions was off, the market was always low, and the onions could be kept in good condition only about 24 hours after they were harvested. Now this same farmer has installed electric refrigeration for storage and can sell week-old onions that are just as fresh as the moment they were harvested.

This farmer is a good customer of ours because we have helped him to hit the top of the market instead of the bottom, and he is using electricity to make money. His problem gave us an opportunity for profitable business and an opportunity to make a warm friend and enthusiastic booster for our company.

The problems of the farmer who produces and markets perishable foods, such as fruits, broilers, and vegetables, offer us a special opportunity. Often a few days delay makes the difference between a profit and loss for him. We can help this farmer sell at a more favorable price if we help him use electricity to control temperature and moisture conditions for storing his perishable products.

A third opportunity, and probably one of the greatest, is to save labor, the supply of which has progressively dwindled. At the same time, the cost of labor has increased so much that it is almost prohibitive. According to U. S. Department of Labor statistics, the cost of farm labor increased 294 per cent between 1939 and 1952. The farmer is squeezed between the increasing cost of labor and the shrinking supply.

An outstanding example of labor saving was reported by one of our farm customers. He does general farming and has about 40 head of dairy cattle. He said that before he installed his electrically operated gutter cleaner it took him about two hours of hard work twice a day to clean the stables. If we take just half of his estimate, we would have two hours of hard labor a day or 60 hours a month. If the cost was $1.00 an hour, it would total $60 a month. On the other hand, electricity did this job for the farmer at a cost of less than 50 cents a month—a whole month's job done for less than the cost of one hour of labor. Another amazing fact is that the farmer estimated that the time required to do the job now is about seven minutes twice a day. Even if the farmer watched while electricity was doing the work each day after he pressed the button, the time consumed would total less than seven hours a month.

We may not be able to achieve such spectacular results with every labor saving job, but I do want to emphasize our opportunities. On the dairy farm, for example, automatic timers can be set to start the silo unloader, feed grinder, and mixer. Automatic controls can be set to measure out the exact amount of feed for each cow, mix and grind it correctly, and then, through chutes, conveyors, and some more automatic controls, deliver a special breakfast diet to Bossy in the manger, while the farmer slumbers comfortably in his own bed under the electric blanket.

Modern dairy farms are using electricity to milk cows and immediately pump the milk from the milker to the cooler. Because this process keeps the milk from any exposure to surrounding conditions or human error, the milk is absolutely clean. It enables the farm to help build the strong, healthy bodies of the city's boys and girls.

Probably the rising cost and the descending supply of labor has squeezed the poultry farmer a little harder than other farmers. Nevertheless, some poultry producers have almost completely eliminated manual labor by using electricity. Electricity hatches the chicks; then it broods them by keeping their feet warm and their backs warm with automatically controlled radiant heat. After the chicks have grown into laying hens, electricity supplies plenty of fresh water, automatically mixes their feed in just the right proportion and then delivers it to them. Electricity automatically ventilates poultry houses, gathers eggs and carries them to refrigerated storage room. Similarly, electricity on some broiler farms has taken over an amazing share of the labor.

Other opportunities to save farm labor challenge us. A tremendous amount of labor is necessary in harvesting, processing, packaging, and storing many vegetables and fruits. The truck farmer needs our help with jobs such as grading and packing tomatoes, washing and bunching carrots, and in getting his vegetables to market. If we can reduce the amount of labor necessary, the farmer will gladly pay us exceedingly well because at the same time he will make money for himself. The use of electricity to save labor in handling the so-called perishable vegetables has unlimited possibilities.

Now I have mentioned three great opportunities to meet some of the challenges facing us today. First, let's help the farmer save more of what he produces. Second, let's help him hit the market high spots; or perhaps we should say, let's help him dodge the low spots in the market. Third, let's help him save labor. All are opportunities to help the farmer make more money by producing more.

One of the first applications of electricity to increase production was the use of power to operate pumps for irrigating arid land. This dry land was always fertile, but water was necessary to make it produce anything. Obviously, food can't be produced without water. Agricultural scientists estimate that it takes about 1000 lb of water to produce 1 lb of food. One hundred pounds of dry wheat contains about 14 lb of water.

Furthermore, it takes ten to 20 tons of water to produce one bushel of corn and 15 to 20 tons of water to produce 1 lb of beef. When these facts are considered along with the fact that no area in our country has an ample supply of water during every growing season, it is evident that irrigation to supplement rain offers us another excellent opportunity. Why not help the farmer irrigate so that he can get maximum yields from his efforts.

If we focus our gaze into the not too distant future, we see many other possibilities of increasing production. Under research conditions various seeds subjected to ultra-violet and other types of light have resulted in amazing yields. In some cases, fertility of certain animals has been increased by subjecting them to certain types of light. Ultra-violet and other types of light probably have a stimulating effect on the growth of meat animals. We are just beginning to realize the effect of light upon production through its application to seeds and animals. It may be possible that the use of electricity to control

and destroy insects such as wheat weevils, boll weevils, corn borers, moths, and other destructive insects can increase production far beyond our fondest hopes.

In almost every phase of farm operations, there are opportunities for electricity suppliers to be of service to the farmer. In view of the developments in farm-power use during the past generation, it may be possible that in the future electricity will propel and operate planting, tilling, and harvesting machinery and do it by remote control.

If we make the most of our opportunities, we should do some dreaming. Here are a few dreams that can be realities right now if we are awake:

1. Automatic regulation of irrigation motors, with relays activated by plaster-of-paris blocks in the soil at root depth.
2. Radio control of field gates, electric fences, pasture pumps, feed conveyors, silo unloaders, and feed-lot equipment at a great distance from other farm buildings.
3. Completely automatic handling of feed for livestock.
4. Radio frequency to destroy insects and bacteria in feed and seeds, such as rice, corn, wheat, and alfalfa.
5. Electrical heat to vaporize gas, such as lindane to kill flies and other pests in dairy barns and other buildings.
6. Dehydration of chopped hay on the farm for use in the production of chlorophyll and related products.
7. Expanded use of the refrigeration principle for air conditioning and heating. Incidentally, Sweden and some other countries are ahead of us in applying the heat-pump principle to farm problems.
8. Automatic candling of eggs and many other uses of electricity to save produce, save labor, and increase production.

If we are going to accept our responsibility and progress as rapidly and as far as we should, it is up to us to recognize the challenges and see clearly every opportunity beyond them. In the rural areas, the boundaries of complete electric living are limited only by our own shortsightedness.

If we act with determined purpose, there is no limit to the amount of help we can give the farmer or to the extent of the rural market. Let's have some definite figures: by 1970 we should be selling American farmers 70,000,000,000 kwhr. Does this sound fantastic? Let's take a look at these facts and figure a little more.

In our service area, one of our average farms supports about 40 head of cattle and 250 hens, plus some other livestock. On this farm is the following equipment: a water system, a milking machine, a milk cooler, barn ventilator, a gutter cleaner, a hay drier, controlled lighting in the chicken house, and some farm shop equipment. In the home one finds good lighting, automatically controlled heat, a refrigerator, a range, a freezer, a washer, an iron, a couple of radios, and a few other small appliances—nothing out of the ordinary.

Obviously, neither the farm nor the home is completely electrified, but in 1952 this farmer's use of electricity was slightly under 17,000 kwhr. This farmer is smarter than many. He knows that electricity is cheaper than hand labor, is more dependable, and does the job better.

However, he can use still more electricity profitably. He could install supplemental irrigation, automatic feed handling, and other labor-saving equipment. In the home, an automatic washer, drier, television, and other appliances could be added. But without these appliances that could be added, this one farm uses 14,000 kwhr more than the national farm average (exclusive of irrigation). American farmers would use well over 70,000,000,000 kwhr if each of our 5,000,000 farms used this difference between our average farm and the national farm average.

While we are on the subject of opportunities, let's not neglect the farm home and the farmer's wife. She is entitled to all of the convenient and time-saving appliances in her home. It is estimated that if she has an all-electric home, she is a potential customer of 18,000 kwhr. This estimate includes heating the home with electricity.

In the rural areas, there is another opportunity. A great potential load is waiting beyond the city water mains for those of us with large numbers of rural residences springing up in suburban areas. We should support the National Water Systems Council promotion because water systems build our load. Such systems are the heart of farm and rural living and the foundation for major appliances. If we pass up cooperating with the Water Systems Council in promoting the 4-4-1 program and Water Systems Month, we are missing an important opportunity to further electric living.

Planned aggressive action is necessary to meet the challenge of these opportunities. Let me illustrate what I mean by building an imaginary arch. We must build this arch on a solid foundation. This foundation is a good reputation. It must be constructed of the best materials, such as continuous electric service and constant voltage, and it must be cemented by a desire and willingness to maintain service in spite of all hazards. On this foundation of service, let's build the idea that we are good citizens. Let's show each rural community our good citizenship by developing and carrying out a well-rounded program of youth activities, with special emphasis on 4-H and vocational agricultural groups; by taking an active part in the programs of such organizations as the Farm Bureau, community planning groups, and community improving groups; by cooperating with the Extension Service of the agricultural colleges; by working with soil and other conservation groups; and by assisting industries in rural areas.

The keystone of this arch is our willingness to help the farmer meet his needs. We must have an honest-to-goodness desire to provide such extra services as engineering assistance, research, and assistance in installing and maintaining equipment for the individual farmer. We must anticipate his needs and be prepared to meet them.

We must maintain an adequate rural service department of capable, well-trained personnel to reflect the company's policies accurately, maintain the company's good reputation effectively, meet competition aggressively, assume leadership in community affairs willingly, provide for customers' needs adequately, and combat unfavorable group reaction intelligently. It's up to us to sell, sell better, sell more. Opportunities are unlimited.

Reaching the Industrial Market

James H. Jewell

Vice President, Westinghouse Electric Corporation

An address before the 19th Annual EEI Sales Conference, Chicago, Ill., April 1, 1953

INDUSTRIAL power represents roughly half of electric company load and, being an integral part of every phase of our industrial economy, reflects the many social and economic factors that influence this important segment of our national economy. In other words, the use of power for industrial purposes is an ideal indicator of our national production, and it reflects quickly every change in our economic or social life.

The other major parts of the market are relatively stable. Our keen interest in social, political, and economic developments stems from our realization of their direct effect on our industrial business.

In looking ahead we are all attempting to evaluate at least the major economic factors. We have a natural concern about the effect of a change in the volume of defense business. Another factor we have been watching closely is expenditures for capital equipment. I have been hearing considerable conjecture about industry's expanded plant capacity. One prominent economist has estimated that we already have 20 per cent more industrial plant than we need. This could be really serious to the electric industry, so let's take a closer look at this capacity question.

Evaluating Industrial Investment

It is true that, by earlier standards, industry has been pouring an unprecedented investment into new facilities. Does this mean that we must look ahead to depression in the capital goods industries? I don't think so.

The fact that a company owns a building full of machinery doesn't mean they are in business. The facility must be able to produce, sell, and make a profit in a free, competitive market. Only then do they have "effective capacity." If a plant cannot meet that condition, it does not have capacity—what is owned is a liability.

We are just emerging from a long period of control into a free competitive market. The marginal plants either are going to modernize or shut down. I don't know why we must have a depression to get rid of these wasters of what is becoming a limited labor force. If our respective sales organizations rise to their opportunities, we can help industry meet this problem.

There are a number of additional factors which will further shrink this "effective capacity." During emergency periods and by the payment of premiums, we have been able to draw people from the home and service industries in order to work our facilities overtime. While our comptrollers will point out that this type of operation makes possible a higher return on investment, we must recognize that we are dealing with people.

They want to play golf on Saturday, go to chuch and for a drive on Sunday, go to the theatre or watch the best television shows in the evening, and go to bed at night—just as you and I do. I believe that we will see the second and third tricks dry up and the full two-day week-end become almost universal. Under this situation, what has happened to our theoretical surplus capacity? It has evaporated!

Personnel managers know the pressure they are getting for regular shift jobs. As incomes rise the premium for odd working hours becomes less attractive.

In Westinghouse Electric Corp. I would guess that 40 per cent of our productive labor hours are on other than the day shift, Monday to Friday. You can see what such a development would mean to us.

In forecasting industry's output and its use of electric energy, we became convinced that the productive man-hours available to industry would be no greater ten years from now than they are today. The shorter work-week, additional holidays, longer vacations, the need of maintaining more than three million men in the armed services, the growth of the service industries, the practice of earlier retirements, as well as the change that is occurring in the age distribution of the population, will together more than nullify the 1.5 per cent annual increase in the population.

We don't have to strain our memories much to recall the normal 48-hour week. Ten years from now our present 40-hour week will be down to 38, and that isn't allowing for the loss due to coffee breaks.

It wasn't so long ago that the standard holidays were Memorial Day, Fourth of July, Labor Day, Thanksgiving, Christmas, and New Year's—six altogether—and usually at least one of them fell on a Sunday. In a recent discussion with a personnel manager in the electric industry, we counted four additional days that were already recognized by many electric companies, and some have reached a total of 12.

More and more companies have been liberalizing their vacation policy. Some give a day for each year of service, and others a week for each five years. These so-called fringe benefits are tangible and have a very real effect on the available man-hours.

A study of the long-term trends of occupations shows that the service industries (hotels, banks, service stations, etc.) are commanding a continuing larger proportion of our total labor force. The increase in leisure time will maintain this trend.

Changes in Age Distribution

Some significant changes are occurring in the age distribution of our population. In ten years our over-all increase will be about 15 per cent, but the age groups of one to 14 and over 64 will, in that same period, increase 28 per cent.

When we consider that the American people will insist on continued steady progress in their standard of living, and we realize that industry is going to have to find a way to increase its physical output the historical 3.33 per cent per year without the benefit of a larger labor force, we begin to visualize the magnitude of the task.

We are convinced the job can be done, but it is going to mean further modernization and utilization of electric energy. We have estimated that to obtain a 23 per cent increase in physical output, constant labor force will require industry to step up its

use of electric energy 54 per cent.

Don't let anyone convince you that this modernizing job has been done with your customers. Every company that has added a new machine recently tends to think they are progressive. If one checks the difference in a company between the newest generator and the oldest one still operating, it will be found that there is a lot of room left for lowering cost and conserving manpower. One of my electric company friends has two plants of the same approximate capacity. In the older plant the labor force fluctuates between 350 and 400. In the newer plant the number of workers varies between 75 and 100.

Improved Productivity

The strong-growth industries are also the industries that are making the greatest strides in improved productivity. While this may be a natural development, it is not necessarily logical. Some of our oldest industries are the most wasteful of manpower. In the predicted restricted labor market they will have difficulty holding their labor, for the industries that have gone farthest in mechanizing will be paying a comparatively high wage.

I think it is evident that industry needs what we are preparing ourselves to supply. We have a real sales function to perform. We must plan, organize, and train the men to do the job. The manufacturer must step up research and development and expand productive facilities. Electric companies must provide the capacity and distribution systems; and, most important, the manufacturer and electric company, together, must bring this know-how to the men in industry who are in a position to do something about it.

Recently some of the industries that have been at the low end of the totem pole in use of electric energy per man-hour are showing some signs of recognizing the problem. I'm sure we in the equipment business must devote more research and development to the problems of the textile, lumber, printing, food, stone, clay, and glass industries. These industries represent a potential source of plus business, and they will be experiencing difficulty in avoiding loss of personnel to the stronger growth industries. These industries represent a field of real opportunity for study by both manufacturers and electric companies.

Our contacts with practically every company in every industry convince us that there is a wide variance in efficiency between industries and between companies. Furthermore, many of the sales of our equipment are still the result of the customers' independent decisions to purchase, not due to our selling efforts. This convinces me that aside from the new industries and new products, there is a large selling job to be done with our present customers. U. S. Steel's annual report shows that the hourly cost of wage employees on steel operations, including fringe benefits which were 94 cents in 1940, increased to $2.39 after the sixth round. As industry in general faces this magnitude of cost increase, it will need and welcome help in making more effective use of its labor.

For some period the problem of the electric companies and the electric manufacturers has been to keep abreast of demand. I am convinced that the long-range plans of our industry are about to bear fruit. Starting this year we will see increases in capacity greater than the increases in demand. Some may feel that our industry's high capacity targets are excessive. I personally do not want to see us cast in the role of a "bottleneck" in case our country faces an all-out effort. If our administration is convinced we need a security reserve in industry, we want to match its requirements. I think we can do it and the improved equipment will pay for itself in a surprisingly short period. I'd like to look forward to providing any such "security reserve" needed by withholding retirements. We are, in my judgment, at the point when it is time to unleash the check reins on our sales departments.

Sales Opportunities

If we begin to turn them loose in earnest and we are able to recapture the vigor that characterized this industry in the selling years, any concern about the large capacity growth will evaporate. Let us consider some of these sales opportunities in the industrial field.

For example, to take just one of the established industries: the chemical industry increased its physical output 137 per cent from 1939 to 1950. In the same period its use of electric energy increased 159 per cent. Large blocks of power are used in electrolytic processes, but electric motors to drive pumps, compressors, and similar equipment are increasing the load. The electric motor is replacing steam-driven equipment because new developments in motor design permit effective operation despite chemical atmosphere or outdoor installation.

The gas and oil industries are increasing their use of power about eight per cent per year and have about the same electrical applications as chemical plants. In addition, pipe lines, both for crude and finished products, provide an electrical load that can be sold against oil engine competition.

In the metals industry, titanium offers an excellent example of growth potential. It requires 36,000 kwhr to produce one ton of titanium. Annual production now is 2,000 tons but in the next five years it is expected to increase to 20,000 tons.

New Applications of Electric Power

These examples are but a few of many which show how the use of electric power can be expected to increase because of industrial expansion and new industrial processes. It is no exaggeration to say that there is a potential for power sales of this nature in every industry today.

Much of the increased generating capacity will be used in large-scale operations which were literally unknown ten years ago. Most dramatic in this field are the developments in atomic energy. The prompt and united action of the electric companies in organizing Electric Energy Inc. and the Ohio Valley Electric Corp. will result in generating capacity of more than 3,000,000 kw.

Another example of how united electric company action can probe new applications of large power loads is the Batelle report on "Comparative Economies of the Open Hearth and Electric Furnaces for Production of Low-Carbon Steel."

Jointly sponsored by 14 electric companies, the report shows that starting from scratch the electric furnace is competitive. Some electric furnaces now being used to produce high-temperature alloy steel require as much as 25,000 kw of capacity. Since the open hearth is now almost universally used in making low-carbon steel, if electric furnaces become accepted the load potential is simply tremendous.

The evidence we have considered reveals a tremendous market potential.

It is well-known that the electrical industry is growing twice as fast as industry as a whole. The exceedingly bright prospects for the future point logically to even greater achievement. Whether this inviting potential is to be converted into load will depend in large part upon one group—the sales force.

The industrial salesman has his work cut out for him. He must have a wide knowledge of new developments in his field, imagination to apply them, and a real interest in the problems and welfare of his customer. And, too, a wholehearted enthusiasm for larceny, pure and simple, will be most helpful in taking away business from competitive power sources.

Consider what the industrial salesman can do by just selling more of the electrical applications now accepted by industry. There are so many opportunities in this field it is almost impossible to even mention all of them.

For example, industry is finding out every day that good working conditions are essential if it is to attract workers in the first place and keep them in the second. Air conditioning, better lighting, and improved ventilation are but a few of the general applications which can help industry with this problem.

Problem of Sales Manpower

In the everlasting struggle for greater productivity, manufacturers have been caught in a web of rising labor and materials costs. The increased use of electrical equipment can help achieve more productivity by saving materials, reducing man-hours, and increasing production rates.

In a survey of any group of sales managers, I think one would get about the same reaction. And their statements would reflect more than a personal opinion, since if their salesmen weren't bringing in the business, somebody else would probably be sales manager.

It seems to me the real crux of the selling problem is not the quality of salesmen. They're good. But we do need more of them. And we need to use the sales force more efficiently.

Of course, this problem of revitalizing the sales force is not restricted to the electrical industry. In the postwar years, practically every industry was faced, is facing, or will face the same condition. However, the timing is easier to judge in other industries. Briefly, when the customer stops hauling the product off the shelf, someone must go out and sell it. It is not quite that simple with a commodity like electric power. But there is considerable evidence that the electric companies must face this problem right now.

Many companies have recognized these facts and have been preparing their sales force to do the job. But industry-wide figures show there is much more to be done. For example, an industry-wide survey reveals that, although manpower in the electric companies' sales force is being increased, it is still only about 75 per cent of the prewar figure, and some of these men are still being trained.

Another indicator is the sales cost ratio. Since 1948 sales cost expressed in per cent of revenue has been 1.6 per cent compared to 2.3 in 1939. Many electric company sales managers point out that the sales cost ratio is not realistic even at a lower figure, because of the increased activity of the sales department in essentially non-load building activities.

Of course, this ratio can be interpreted in many ways, but the experience of other industries would indicate in general that today's market requires a sales cost ratio at least equal to prewar figures.

The job ahead is not an easy one. It is not easy to convince management that low selling costs realized during the war are not feasible today. It is difficult to expand a sales force when there is a real shortage of technical personnel. The complexity of modern business and the many new products and developments increase training problems, which were probably never very simple in the first place.

What can be done about it is an interesting, if loaded, question. And the final answers will come from many people and many companies. But here are some of the things I think can be done to help build up sales now for the challenge.

In the first place, we must start now to increase the sales organization. The electrical manufacturers faced this problem a little earlier, and possibly our experience will be of some use to electric companies.

The need for more distribution, transmitting, and generating equipment sparked a large expansion program in the electrical industry. We knew we were going to need more salesmen to give our customers adequate service, and we also knew that an increase in sales costs over the ultra-low war period was not going to be popular.

To prepare our case we had our market development people make a customer-by-customer study in each district of the actual sales man-hours required for our major customers. With this figure we knew how many salesmen we needed for any given volume of business. With favorable conditions we felt we could get enough sales to balance our expanded production. Further study showed that we could add the 200 people we needed and maintain our selling ratio at approximately 1939 figures, based on break-even volume.

This plan was presented to top management along with a guarantee that we would not exceed the 1939 sales ratio, even though it meant doubling the rates of 1946 and 1947. The program was authorized, skeptically I think, but still authorized, and electric companies subsequently proved our forecasts were conservative.

Program for Electric Companies

This method was successful in getting us badly needed manpower. Today, with even more expansion, we are reviewing our sales organization once again and hiring more people. It seems to me that the electric company problem of sales manpower is closely related to the manufacturers', and a similar program might be developed in the utility field.

With the shortage of technically trained men, manpower alone, of course, is not the whole answer. More sales can be realized through advanced training of the salesman. His knowledge of new equipment and developments and how they can be applied for the benefit of the customer is one of the real keys to load building.

Traditionally the electric company and the manufacturer have worked together in this field for mutual gain. Product presentations, factory visits for the salesman, and customer sales presentations of varied sizes and sorts are but a few of the methods which have been used successfully. This work should be continued now more than ever because of the expanded market and the great number of new developments.

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The Economic Outlook

Martin R. Gainsbrugh
Chief Economist, National Industrial Conference Board

An address before the 19th Annual EEI Sales Conference, Chicago, Ill., April 1, 1953

JUST a year ago, speaking before the National Electrical Manufacturers Association, I offered the conclusion that "no new round of inflation now seems to be on the horizon. We are the beneficiaries of the lull in inflation, uncomfortable as that process may be. At its first anniversary we can rightly say the process of adjustment in the private sector is at least strengthening general business against the time when defense spending turns down."

On the second anniversary of the lull in inflation, that conclusion seems to be even more applicable to the emerging pattern of economic activity in 1953. Prices have been returned largely to determinations by the free market mechanism. Price decontrol was accomplished quickly under the new administration with no great rush on the part of consumers to buy while ceiling prices still held, and despite scare heads in some media that the elimination of controls would cost America's consumers billions of dollars in higher prices.

The simultaneous ending of wage controls has thus far been accompanied by wage increases of more modest dimensions than those characterizing the wage stabilization program. Sharp price corrections in the agricultural sector have been absorbed without violent repercussions throughout the general price structure. As a result, the exchange relationship between the farm and nonfarm population has been significantly strengthened.

Meanwhile, without the stimulation of either rising prices or any substantial increase in defense spending, the rate of economic activity has risen slowly but steadily to a new peak. Most of our economic thermometers are now higher than at any time in the nation's history, with the possible exception of the forced draft upon manpower and other resources under the artificial pressures of World War II.

News about the new peaks in employment and national product reached each month has become cheerfully monotonous, and discussions of the current economic scene are today largely devoted to exploring the question, "How Long Can Business Stay This Good?" rather than "How Good Is Business—and Why?" And yet an understanding of the factors contributing toward and underlying the current high rate of business activity is a prerequisite for judgment as to its continuance. In many instances, however, judgment is largely emotional in character or rests upon such timeless axioms (if not hackneyed commonplaces) as the "weary, tired boom"; "every boom has its bust"; "this upswing has already lasted longer than in any previous business cycle"; "our first major postwar recession (or depression) is long overdue," etc., etc.

Renewed Activity

I propose, therefore, to explore the renewed growth in activity which first came into bud shortly after mid-1952 (the so-called post-steel strike "boomlet"). This bud blossomed in the fourth quarter under the favorable election results. It reached its full bloom in the first quarter of 1953 with the increasing resort by the new administration to the flexible, free market mechanism. And such foreshadowing statistics as we now possess—business plans to invest, consumer expectations to purchase, big-tag items, industry's woodpile of new and unfilled orders, among others—suggest that the gross national product for 1953, in both current and constant dollars, may be the highest entered in business annals.

The total market value of goods and services produced (gross national product) in the first quarter of 1953 is already several billion dollars greater than the previous record total of the last quarter of 1952. This indicates that not only has business during the first quarter of this year continued at high levels, but also that it has, in fact, been expanding slowly. Steel has been in greater supply, reflecting both expansion of domestic capacity and increased imports. This in turn has resulted in a further growth of activity in steel-consuming industries, where backlogs remain very high. The uptrend is broader based than that, however. Producers of consumer goods in general have experienced their usual spring upsurge. Employment in the first quarter of 1953 was considerably above a year ago in both durable and soft-goods industries. In fact, the increase in non-agricultural employment has been large enough to more than offset a continuation of the steady decline in agricultural employment, as well as the year-to-year addition to the civilian labor force. As a result, unemployment is significantly lower than a year ago.

For the first quarter as a whole, personal and disposable income have evidently averaged higher than in the fourth quarter. However, the rate of advance in consumer income that featured the last half of 1952 has slowed considerably. But at the same time, the sluggish downward movement of consumer prices that began late last year continued into January and, on the weakness of food prices, into February. As a result, real disposable income in the first quarter has set a further new record, in terms of per capita as well as total income.

Consumer spending has continued firm, with considerable strength in the automobile and household durables markets. For the third successive quarter the personal saving rate has apparently run in the neighborhood of $20 billion annually, but the month-to-month figures suggest that the savings rate may have been declining slowly during the quarter.

This brief description of trends in significant business indicators in recent months provides a skeletal framework upon which to drape a

series of meaningful conclusions about the current and continuing economic expansion. Briefly stated, the most noteworthy aspects of this slow but steady upsurge in industrial activity are:

1. The expansion occurred and is continuing primarily in the private sector — in business investment in plant and equipment and consumer spending for both hard and soft goods, as well as services. Expenditures for national security reached an annual rate of about $50 billion in the second quarter of 1952 and have remained relatively unaltered ever since. Total governmental purchases of goods and services are now in excess of $80 billion (including state and local outlays as well as Federal), but they are now a lower percentage of national output than a year ago.

2. Unlike much of the postwar expansion, the latest upsurge emerged in a noninflationary environment. Prices in general ranged from stable to tilted gently downward over the period in question. The over-all growth in 1952 in the nation's money supply (adjusted demand deposits plus currency in circulation) was only about $4 billion or roughly 3 per cent, as compared with 6 per cent in 1951. This expansion, then, did not stem from "printing press" money to the same extent as in earlier years, as witnessed by the prospect of a balanced cash budget by the end of this fiscal year.

3. The expansion in consumer buying in the second half of 1952 and continuing in the first quarter of 1953 did not come at the expense of personal savings. Personal net savings (including noncorporate businesses) rose to an annual rate of about $20 billions in the closing months of last year and have held at about that rate. This represents nearly 9 per cent of individual income after taxes, or a percentage previously unequalled except under the shortages of consumer goods which arose during World War II.

4. Personal debt, including mortgage and installment debt, continued to rise throughout this expansion but on net balance, that is, after allowance for the increase in such indebtedness, personal net savings were at record heights, excluding only the World War II experience. It is noteworthy in this connection that, despite the emphasis upon the growing debt burden of consumers in much current discussion of the business outlook, the most recent Federal Reserve Survey of Consumer Finances finds that consumers believe their financial position is stronger than a year ago. This survey, taken earlier this year, revealed that "the proportion of consumers who feel their financial situations have improved is somewhat larger than it was in any previous postwar survey. Liquid asset holdings as reported in early 1953 are widely distributed among income classes, as was the case in all of the previous surveys. The proportion of consumers who feel times are good for making major purchases has increased considerably since early 1952."

These are some of the elements of strength to be given consideration in appraising the economic outlook currently. Following is a list of the elements of weakness or the negative factors of imbalance that are cited most frequently in casting up accounts for the national economy.

Status of Farm Economy

According to official forecasts, the decline in prices received by farmers may result in a drop in farmers' gross income of, say, about 5 per cent from 1952 and a slightly larger drop in net income. The farm economy, however, will still be in a relatively good financial state. Farmers' financial assets are at all-time highs and their equities are also at peak levels.

While no official data are available yet, reports from some of the major farm machinery producers seem to indicate that sales of farm machinery in 1952 were off moderately, perhaps around 10 per cent, from the 1951 peak. Some of the decline may be attributed to production cut-backs due to strikes in steel and in some of the farm machinery companies. Also, backlogs of demand for machinery which had piled up at the war's end have been virtually filled.

It remains true, even after the recent price correction, that total net income of persons on farms still continues at high levels, even when compared to its 1948 peak. Total net income to persons on farms from 1948 to 1952 dropped some 5 per cent. But farm population fell off proportionately, so that per capita net income of the farm population has remained virtually unchanged.

In addition, the people of productive age who have left the farms are now productively employed in cities or nonfarm areas, as evidenced by the low volume of unemployment, thereby contributing to the nonfarm national income. So the falling off in total farm income has not meant a contraction of over-all demand. However, it has meant a shift in type of demand. More in point is the fact that the farm community is now supporting fewer people than it did five years ago. After correction for this factor, the funds available for the purchase of production items have probably not contracted at all, or at least not to the extent of the drop in total income.

1. The condition of consumer installment debt cannot be written off as an inconsequential element. This is not so much because the level of installment debt is now at or above its prewar relationship to income. The more serious concern is that in the past ten months the rate of increase in outstanding debt has been exceedingly rapid. Consumer durables markets appear now to rest heavily upon creation of credit, particularly in view of the declining rate of household formation, and it may be only prudent to note that even a slowing in the rise of outstanding debt implies a reduction in the rate at which new installment credit is being granted. If and when the rise in debt slows, retail markets for durables may be affected rather markedly.

2. The recent steadiness of the wholesale price level reflects a number of offsetting changes: a change from downward to steady among most farm prices; upward shifts in certain commodities (such as copper, some chemicals, stainless steel) as they were decontrolled; and a slight downward drift in the price of those nonfarm commodities which were not affected by decontrol. By late in the year, however, the price level may be subject to new and harsher downward pressures arising from the continual growth in supply

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The Future of Room Air-Conditioning Sales—A Vast Business

John M. Otter

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An address before the 19th Annual EEI Sales Conference, Chicago, Ill., April 2, 1953

I REMEMBER back in 1938 when I mailed a coupon from an air-conditioning magazine advertisement, requesting information on an air conditioner for my office. Ten days later two men arrived with a large briefcase full of tape measures, rulers, charts, etc. Twenty minutes later, after they had carefully measured from front to back, side-to-side, and floor to ceiling, after they had "oh-ed" and "ah-ed" about all the glass in the windows, and the southwest exposure, they left with a promise to tell me what could be done, if anything, within two weeks.

In those days one had to be a technical man—an engineer—to sell air conditioning, and the technical men who called on me were not good salesmen. Today any good salesman can sell an air-conditioning unit just as they sell refrigerators, electric ranges, and television. They simply need training. They need to know all about these new air conditioners.

In the old days there was very little competition, and, as a result, very little business. This year, there are 72 manufacturers selling room air conditioning, and there is plenty of competition. Good business always means tough competition. It has to be that way: it is the American way, and the strong are always going to win from the weak.

Not all industries are fortunate enough to come of age at the time of great prosperity. Today there is not only an acceptance and demand for air conditioning but there is also enough money around to buy air conditioning. The American economy is the most liquid economy the world has even seen. Liquid assets of the people of this country totaled about $195,000,000,000 at the end of 1952. They had cash amounting to $21,300,000,000; demand deposits of $33,500,000,000; savings accounts of $60,000,000,000; and government securities of $61,000,000,000.

That is enough money to pay all present consumer credit outstanding in cash. It is enough money to buy for cash the entire production of the automobile industry for this year. In addition, it is enough money to buy all the houses that will be built this year. It is enough money to buy for cash all the listed stocks on the New York Stock Exchange. After buying all of these things, the people of this country would still have $29,000,000,000 left over.

There is plenty of money to buy room air conditioners if we advertise, merchandise, sell, and service on a sound, aggressive basis.

Excellent Prospects

I dislike prophesying sales for future years. It is so easy to be wrong. However, my best guess for 1953 is 500,000 units, and by 1958 I would not be surprised if the industry sold 1,000,000 units.

An air conditioner is not the same kind of appliance as a refrigerator, a range, a freezer, or washing machine. One of these appliances is sold to a home, but the market in every home for an air conditioner is equal to the number of rooms in that home. Forget the home for a minute. The boss who has an air conditioner in his office is unpopular until his executives have been treated equally as well. And how about the office force? There is no end of the prospects for sales.

I believe that some one of these years—not far away either—there will be more room air conditioners sold than refrigerators, and that means big business. Incidentally, there are some distributors right now who sell more air-conditioning units than refrigerators. I could go on at great length dealing with the good side of this business, but I must sound a word of warning: this business is not all peaches and cream.

Last summer was hot—hot in the North, South, and Middlewest—and the public knocked down our doors to buy. It was a sell-out, and it was wonderful. Of course, it has been hot before, and this didn't happen in other years. So the public was particularly receptive last summer. But maybe it won't be hot next summer and then what? Any business that depends entirely on the weather is a tough business. It is dangerous, and many of these brand-new air-conditioning manufacturers who have jumped so quickly into the industry should take note. Tremendous production figures have been thrown around. Maybe they are just enthusiastic sales figures and, for the most part, I believe they are. It is not easy to start from scratch or even to increase a well run plant in a short time.

Enthusiasm, many times, colors better judgment. Businessmen hear stories of tremendous sales. They have visions of becoming millionaires in one short three-month period. If they are not ready, if they miss just these three months, the opportunity goes forever. That may be true in oil wells and it may be true in the stock market, but it has never been true in the appliance business. Speed has never counted in comparison with quality and reputation. Acceptance and demand take time. They have to be earned, and in the appliance business, there is time. It takes years to saturate the United States, and even then sales opportunities are just starting because of new developments, new features, and new engineering.

Air-conditioning businessmen learned sometime ago to sell well in advance of hot weather. They learned that the air-conditioning business could never grow if it continued as a sideline and sales were made out of the back door of the distributor at a discount to friends. They learned that theirs is a dealer business and that sales had to be on a sound basis, with the same kind of promoting and merchandising as the industry has always

given appliances. And, most of all, they learned that the business started in January, that it gathered strength during February and March, and that by April dealers were selling to the public. By May and June, pre-season stocks have disappeared. The summer season simply keeps plants going a little longer.

The industry has learned not to depend on hot summer weather to sell merchandise that is built early in the year. Again I say a sound business cannot be built if it depends solely on the weather. For some years this industry has worked hard to reduce the price, the weight, and the size of a room air conditioner. These three factors were regarded as the major handicaps and indicated to a great extent why sales volume was not larger. Some progress has been made, but the industry has never learned how to get rid of the evaporator, the condenser, the motor, the fan, or the chassis. Neither has production been great enough to expect any real manufacturing savings. Also, air-conditioning businessmen have learned that it was not only price, size, or weight that had held down volume, but it was a case of the need for educating the American public on air conditioning just as it has been with every new appliance.

The room air conditioner, in a normal sequence of events, through acceptance by the public, has come of age. I have not called this machine a room cooler as we so often did in the past. The air conditioner has outgrown that name. Today it is just what the name implies—an air conditioner. It conditions the air for complete comfort. In the summertime when the air is hot, it cools; when the air is humid, it rings the water out; when the weather is comfortable, but the room is stuffy, it brings in clean fresh air or blows out the smoky, smelly air. And now, this year, when the weather is hot, the air conditioner cools, but, for the first time, when the weather is cool, the air conditioner heats.

Heat-System Methods

Two entire seasons have been added for the use of an air conditioner in most parts of the country, and in the South, Southwest, and California, its usefulness is 12 full months.

There are two heat-system methods being used this year. One uses a heating coil built inside the air ducts so that the fan will blow the air over the coil and give heat. The other very simply makes use of the heat normally thrown away. A valve built into the air conditioner reverses the flow of the refrigerant within the unit. During the heating cycle, the evaporator becomes a condenser and the condenser acts as an evaporator, which results in warm air coming into the room and cold air going outside. You simply turn a knob for heating or cooling, and you get one or the other at once.

Neither of the heat systems is meant to replace a regular heating system. They are auxiliary heaters meant for use in the spring or the fall to take the chill out of the air when outside temperatures are not lower than 40 degrees.

In the warmer climates the air conditioner is a full time operator and will take care of all heating problems.

Another feature that makes an air conditioner more acceptable and helps our future look brighter is automatic temperature control. Here again there are two methods. One turns the unit off by use of a thermostat when the temperature gets too low, and on again when cooling is required. The other method, which controls the amount of refrigerant flowing through the evaporator, does not turn the unit off but holds the temperature to the customer's own desired comfort. Because the unit is never off, it continues to deliver fresh air and also continues to dehumidify.

Features and improvements of these kinds prove the coming of age of this business. It is natural, in studying the future of air conditioning, that we should wonder how the individual unit stands in relation to the central system. There is certainly a market for both, but it is my firm belief that the individual unit has many advantages for most needs. Single air-conditioning units cannot do a good job of cooling a hotel lobby or a hotel ballroom, but for hotel rooms, offices, or the home there is no comparison.

The cost of installation in a home or large building of a central system is very high unless it is built in while under construction, and even then, if properly planned, the individual units are many times less expensive. The cost of operation of single-room units is considerably less. Unless the office or room is being used, the unit is not turned on. There is no wasted operating expense. In many cities the cost of water for a central system is quite high, sometimes the water power is not great enough, and in times of water shortage, there may be no air conditioning at all.

The convenience of a single unit is another strong factor, for the direction of airflow can be adjusted.

There is an installation being made now in Pittsburgh of 900 single-room air conditioners in the Gulf Oil Building. According to the manager of this building, the cost of installation of a central system was quoted at $1,500,000 to $2,000,000. The installed cost of the 900 single-room units is around $300,000. The cost of water for the central system, which required 500 tons of water daily, was estimated at $420 per day. The 900 units are being installed without disturbing office people, and if one unit breaks down, the others are not affected. The one non-operating unit can be serviced or repaired within an hour, or replaced within an hour.

This installation and hundreds of others, I believe, are setting a definite pattern for the future of the single-room air conditioner. There is not a hotel, office building, or home in any city large or small in this country that is not a good prospect for single-room air conditioners. Motels throughout the South and Southwest saw the light early. They installed air conditioning and today are taking the business away from those large hotels which do not give their guests real comfort during the hot weather.

Electric-Company Role

The electric companies of the nation fit into the future of the air-conditioning business as closely as do the manufacturers. The young air-conditioning industry needs the electric companies' counsel, their guidance, their backing, and their strength. It needs all of that and more. The public is becoming enthusiastic about air conditioning but needs still more selling and education. Wiring, however, is a problem in thousands of homes, and the air-conditioning industry needs help and cooperation to overcome this hurdle. It is expensive to get a new industry rolling in high gear, but anything worth having is worth fighting for, and, in the case of air conditioning, the end result cannot help but justify the means.

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K-2—Electric Light and Power Industry in 1942 (6/43)	.30	.75
J-2—Electric Light and Power Industry in 1941 (5/42)	.30	.75
(Statistical Bulletins also available for years 1932 to 1940 inclusive) each.	.30	.75
Weekly, Monthly and Annual Statistics (Includes Annual Statistical Bulletin; Weekly Electric Power Output; Monthly Electrical Research Statistics).	2.00	2.00

Engineering Committees

ACCIDENT PREVENTION—RESUSCITATION

51-8—"By the Grace of God," 1951	.25	.25
100—499 copies 15% discount		
500 or more copies 25% discount		
P-9—Application and Care of Rubber Protective Equipment, 1948	.25	.25
100-499 copies, 15% discount		
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O-15—Use and Care of Pole Climbing Equipment, 1946	.25	.25
M-10—Fifteen Messages on Accident Prevention in Electric Utilities	.10	.10
L-4—Linemen Cutouts (2/45)	.10	
K-8—Pole Top Resuscitation (9/43). (Quantity Prices on Application)	.10	

ELECTRICAL EQUIPMENT COMMITTEE

50-7—Specifications for Alternating Current Power Circuit Breakers (2nd Edition) AEIC—1950	.60	.60
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Single copies	.25	
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50 to 99 copies	.18	
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HYDRAULIC POWER COMMITTEE

52-14—Pitting Experiences of Hydraulic Turbines	.60	1.50
D-15—Penstocks (12/35)	1.00	2.50

JOINT REPORTS

	Members	Non-Members
51-19—Joint Use of Poles in Rural Areas, EEI-Bell Systems, 1951	No charge	
51-16—Inductive Coordination Aspects of Power Factor Correction Capacitor Installations — Engineering Report No. 50 — Joint Subcommittee on Development & Research—EEI and Bell Telephone System—1951	.80	2.00
51-3—Recommended Standards for Distribution Transformers, Conventional Subway Type—1st Report, EEI-NEMA, 1951	.60	.60
R-9—Branch Circuit Overcurrent Protection for Low-Voltage Circuits of 30 Amperes or Less Used for Interior Wiring—Report of Joint Committee on Branch Circuit Protection of AEIC & EEI, 1949	1.00	1.00
R-6—Preferred Voltage Ratings for A-C Systems & Equipment, EEI—NEMA (1949)	.70	.90
Q-8—Single - Phase Motor Starting Current Rules, EEI-NEMA-AEIC, 1948	.25	.25
Q-4—Guide for Specification on Indoor Metalclad Switchgear, AEIC-EEI-NEMA, 1948	.25	.25
Q-3 — Standards for Distribution Transformers (Fourth Report), EEI-NEMA, 1948	.80	1.00
P-1—Mutual Assistance in General Emergency Situations Affecting both Power & Telephone Service—Report of Joint Subcommittee on Cooperation in Emergencies, EEI and Bell Telephone System	No charge	
O-12—Report of Joint Engineering Committee of Association of American Railroads & EEI on Crossings of Electrical Supply Lines and Facilities of Steam and Electrified Railroads (8/46)	.50	
Quantities of 25 or more	.40	
O-11—Mutual Practices Applying to Installation and Maintenance of Equipment Used in Providing Telephone Service by Power Line Carrier in Rural Areas (For Field Trial)—Report of Joint Committee on Plant Coordination of EEI and Bell Telephone System	No charge	
M-12—Joint Pole Practices for Supply and Communication Circuits—EEI-Bell Telephone (1945)	.50	1.25
M-9—New Developments in Office Machines — Joint AGA-EEI Customer Accounting Committee Report	.50	.50
M-5—Principles and Practices for Inductive Coordination, Allocation of Costs and Joint Use of Poles—EEI-Bell Telephone (1945)	No charge	
L-5—Interim Report of The American Research Committee on Grounding (1/44)	.10	
K-1—Volume 5 of Engineering Reports Nos. 39 to 49 of Joint Subcommittee on Development and Research (1/43)	5.00	10.00
J-6—Wave Shape of Multi-Phase Rectifiers—Engr. Report No. 49—Joint Subcommittee on Development and Research (8/42)	.50	1.25
J-4—Low Frequency Shielding in Telephone Cables—Engineering Report No. 48—Joint Subcommittee on Development and Research (5/42)	.80	2.00
J-1—Positive Disconnection of Distribution Circuits During Faults to Ground—Engineering Report No. 47—Joint Subcommittee on Development and Research (4/42)	.60	1.50
I-8—Susceptiveness of Subscriber Station Sets—Engineering Report No. 46—Joint Subcommittee on Development and Research (12/41)	.60	1.50
I-7—Frequency Weighting for Message Circuit Noise — Engineering Report No. 45—Joint Subcommittee on Development and Research (12/41)	.20	.50
H-12—Neutralizing Transformers — Engineering Report No. 44—Joint Subcommittee on Development and Research (7/41)	.30	.75
H-10—Effects of Bonding Exchange Aerial Telephone Cable Sheaths to Multi-Grounded Power Neutrals—Engineering Report No. 43—Joint Subcommittee on Development and Research (6/41)	.30	.75
H-8—Standard Basic Impulse Installation Levels — AIEE-EEI-NEMA (1/41)	.05	.05
H-3—Inductive Coordination Aspects of Petersen Coil Grounding—Engr. Report No. 42—Joint Subcommittee on Development and Research (12/40)	.25	.65
F-17—Short - Circuiting Relay Protectors—Engr. Report No. 41—Joint Subcommittee on Development and Research (8/38)	.40	1.00

PRIME MOVERS COMMITTEE

52-13—Metallurgy and Piping Report, 1952	.80	2.00
52-5—Turbines, Condensers and Auxiliaries, Feed-water Heaters, Evaporators, and Deaerators, 1950 (1952)	1.40	3.50
51-9—Power Station Chemistry, 1951	.50	1.25
51-5—Turbines, Condensers & Auxiliaries, Feedwater Heaters, Evaporators & Deaerators, 1949 (1951)	1.20	3.00
51-1—Gas Turbines, 1951	.20	.50
50-13—Deposits on Gas Side of Steam Generating Units, 1951	.30	.75
50-10—Metallurgy and Piping Report, 1950	.90	2.25
50-1—Turbine & Condensers and Associated Equipment, 1948 (1950)	1.00	2.50
R-13—Turbine and Boiler Overhaul Practice (1949)	.50	1.25
R-8—Boiler Auxiliaries, 1948	.30	.75
R-7—Metallurgy and Piping, 1948	.60	1.50
R-3—Turbines, Condensers & Auxiliaries, Feedwater Heaters & Evaporators, 1946-47 (1949)	1.40	3.50
R-1—Boilers & Combustion, 1948 (1949)	1.00	2.50
P-10—Boiler Auxiliaries, 1946-1947	.70	1.75
P-8—Turbines, Condensers, and Their Auxiliaries, 1945-1946	1.00	2.50
P-4—Metallurgy and Piping, 1947 (9/47)	.60	1.50
O-13—Boilers and Combustion, 1946	1.00	2.50
M-6—Boiler Auxiliaries, 1944-45	.70	1.75

TRANSMISSION AND DISTRIBUTION COMMITTEE

52-10—Cable Operation Report, 1950 (1952)	.70	1.75
52-6—Cable Operation Report, 1949 (1952)	.70	1.75
51-10—Cable Operation Report, 1948 (1951)	.70	1.75
51-6—A-C Network Operations, 1947-1949 (1951)	.65	1.65
50-3—Cable Operation, 1947 (1950)	.75	1.75
Q-12—A-C Network Operations, 1944-1946 (1949)	.60	1.50
Q-10—Cable Operation Report, 1946	.75	1.75
Q-1—Cable Operation Report, 1945	.75	1.75
O-14—Cable Operation Report, 1944	.60	1.50
M-16—Cable Operation Report, 1943	.50	1.25
M-1—A-C Network Operations, 1941-1943 (1943)	.60	1.50
L-1—Cable Operation—1942 (12/44)	.50	1.25
K-10—Line Clearing Manual, 1944 1-9 copies		.35c.
H-6—Distribution Transformer Load Supervision (3/41)	.60	1.50
F-10 — Tree Trimming Practices (10/38)	.20	.50

SUGGESTIONS FOR SPECIFICATIONS

10 to 49 copies, 25% discount
50 or more copies, 50% discount

MS-1—Suggestions for Specifications for Standard Dial Constants for Alternating Current Watthour Meters (8/40)	.10	.10
MSJ-3—Standards for Metering Current Transformers for Primary Circuits, AEIC-EEI-NEMA, 1951	.10	.10
MSJ-4—Standards for Indicating Demand Registers, AEIC-EEI-NEMA, 1952	.50	.50
MS-5—Specifications for Indicating Thermal Watt Demand Meters, 1946	.10	.10
MS-6—Specifications for Marking and Arrangement of Terminals for Phase-Shifting Devices Used in Metering, 1946	.10	.10
MSJ-7—Standards for Watthour Meter Sockets, AEIC-EEI-NEMA, 1950	1.25	1.25
MSJ-8—Standards for Test Blocks and Cabinets for Installation of Self-Contained "A" Base Watthour, Meters, AEIC-EEI-NEMA, 1951	.50	.50
TD-1—Specifications for Steel Bolts and Nuts, 1949	.10	.10
TD-2—Specifications for Strand Eye Anchor Rods 1942	.10	.10
TD-3—Specifications for Lag Screws, 1950	.10	.10
TD-4—Suggestions for Specifications for Eye Bolts 1939	.10	.10

	Members	Non-Members
TD-5—Suggestions for Specifications for Expulsion and Eyelet, 1941	.10	.10
TD-6—Suggestions for Specifications for Steel Cross Arm Braces 1940	.10	.10
TD-7—Specifications for Spool Type Secondary Racks 1948	.10	.10
TD-8—Suggestions for Specifications for Straight Tinned Copper Connectors 1940	.10	.10
TD-9—Specifications for Single Tube Seamless Copper Splicing Sleeves 1942	.10	.10
TD-10—Specifications for Rolled Steel Washers, 1953	.10	.10
TD-11—Specifications for Guy Hooks and Guy Strain Plates, 1951	.10	.10
TD-12—Specifications for Pole Guards, 1946	.10	.10
TD-13—Specifications for Guy Thimbles, 1950	.10	.10
TD-15—Specifications for Pole and Lower Steps, 1946	.10	.10
TD-16—Line Hardware Materials Inspection Procedure, 1950	.10	.10
TD-17—Specifications for Bolt Type Steel Insulator Pins with One Inch Diameter Lead Threads, 1947	.10	.10
TDJ-19—Standard Mounting Bracket for Distribution Cutouts and Distribution Lightning Arresters, 1949.	.10	.10
TD-21—Specifications for Steel Clevises for Guy Strain Insulators, 1952	.10	.10
TD-22—Specifications for Pole Top Pins, 1951	.10	.10
TD-23—Specifications for Guy Clamps, 1951	.10	.10
TD-51—Specifications for Low and Medium Voltage Pin Type Lime-Glass Insulators 1942	.25	.25
TDJ-52—Standards for Wet-Process Porcelain Insulators — Suspension Type, EEI-NEMA, 1952	.25	.25
TDJ-53—Standards for Wet-Process Porcelain Insulators—Spool Type, EEI-NEMA, 1952	.25	.25
TDJ-54—Standards for Wet-Process Porcelain Insulators—Strain Type, EEI-NEMA, 1952	.25	.25
TDJ-55—Standards for Wet-Process Porcelain Insulators—Low-and-Medium Voltage Pin Type, EEI-NEMA, 1952	.25	.25
TDJ-56—Standards for Wet-Process Porcelain Insulators—High-Voltage Pin Type, EEI-NEMA, 1952	.25	.25
TDJ-57—Standards for Wet-Process Porcelain Insulators—High-Voltage Line-Post Type, EEI-NEMA, 1952.	.25	.25
TD-71—Suggestions for Specifications for Insulator and Pin Threads and Gauges 1937	.10	.10
TD-72 — Tentative Specification for Line Connectors and Splices 1949	.10	.10
TD-90—Specifications for Douglas Fir Crossarm Treated or Untreated, 1949	.10	.10
TD-91—Specifications for Dense Southern Pine Crossarms, Preservative Treated, 1950	.10	.10
TD-100—Specifications for Full-Length, Non-Pressure Preservative Treatments of Poles (Hot and Cold Submersion Processes), 1952	.25	.25
TDJ-110—Standards for Distribution Fuse Links, EEI-NEMA, 1951	.15	.15
TDJ-131 — Standards for Filament Lamps Used in Street and Highway Lighting, EEI-NEMA, 1951	.10	.10
TDJ-132—Standards for Photometric Tests for Luminaires Used in Street and Highway Lighting, EEI-NEMA, 1951	.10	.10
TDJ-133—Standards for Voltage Classification of Luminaires Used in Street and Highway Lighting, EEI-NEMA, 1951	.10	.10
TDJ-134 — Standards for Pendant Luminaire Mounting Used in Street and Highway Lighting, EEI-NEMA, 1951	.10	.10
TDJ-136—Standards for Series Sockets and Series-Sockets Receptacles Used in Street and Highway Lighting, EEI-NEMA, 1951	.10	.10

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Farm Electrification Speakers' Slide Kit on Electrical Safety and Maintenance on the Farm—57 Kodachrome slides and speakers' script—single kits 12.00
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50-8 — Farm Electrical Equipment Handbook, 1950
Single copy 2.25 postpaid. Quantity prices upon request

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Farm Electrification Manual—Includes 14 Sections of original series excepting Section 3, which will be forwarded when revised, 1947	5.00	8.00
New Series — Sec. 15, Dairy Stable Ventilation, 1950	.40	.60
New Series — Sec. 16, Barn Cleaning, 1951	.30	.45
New Series—Sec. 17, Poultry House Ventilation, 1951	.25	.40

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53-5—Study to Determine the Load and Revenue Potential of Apparel Stores, 1953	.50	.50
52-11—Application of Electrical Equipment in Commercial Establishments, 1952	1.00	2.50

Quantity prices upon request.

51-22—Electric Range Installation Manual, 1951	.50	.50
51-21—Electric Laundry Equipment Installation Manual, 1951	.35	.35
51-15—Study to Determine Load and Revenue Potential of American Food Market, 1951	.25	.25
51-12—Study to Determine Load and Revenue of Water Heater Market, 1951	.25	.25
R-19—Catalogue of Sales Aids for Electric Industry, 1949	1.00	2.00
P-6—The Heat Pump (7/47)	25	25

Lighting

52-9—Electric Signs—the Merchants' Best Advertising Medium, 1952	.25	.25
52-8—Home Lighting Story of Company X, 1952	.30	.30
R-18—Tabulation of Information Relating to Street Lighting As Obtained from Returns of 104 Public Utility Companies Throughout the U S, 1949	.40	.40

Power

I-1—Power Sales Manual—Sections 1 to 10 and 12 to 17 and Supplements to Jan. 1, 1953 (Includes one Binder)
Prices Upon Request

Water Heating

O-4—Model Specifications for the Installation of Wiring and Plumbing for Automatic Electric Storage Water Heaters ..... .25 .25

NATIONAL PROGRAMS

Better Light-Better Sight Bureau

"Teaching About Light and Sight"—Classroom program for teaching 5th and 6th grade students about light and sight. Price list upon request.

"Living with Light"—Classroom program for teaching Junior High School students about light and sight. Price list upon request.

"Light Is What You Make It"—A sound movie in technicolor produced by Disney Productions 16mm. 10 minutes. Price list upon request.

"Let There Be Light"—Street lighting, sound slide film. 15 minutes, 75 frames 25.00

"See for Yourself"—Home lighting, sound slide film. 15 minutes, 105 frames 30.00

"Educating In a Truer Light"—School Lighting, colored sound slide film, 22 minutes—over 100 frames 50.00
Accompanying booklet ..... 5.00 per 100

Planned Lighting Program

Series of mailers and booklets promoting planned lighting for stores, schools, offices, industries and homes. Price list upon request.

Sales Training Program

Three Courses Available—Residential, Commercial and Rural
Prices Upon Request

Appliance Sales Training Course—6 Films and Records	250.00
Set of 6 Salesmen's Manuals for above course	4.50
Industrial Sales Training Handbook	18.50
Residential Lighting Film & Record	30.00
Residential Lighting Salesmen's Manual	.75

Mother-Daughter Program
An electrical-living promotional program featuring a 27 minute color sound movie. Prices and details upon request.

OTHER PROMOTIONAL MATERIALS

Commercial Cooking

"Your Answer to Commercial Cooking ..... .70
Quantity prices upon request.

"Penny Folder"—"Invest One Cent in Electricity" ..... 4.50 per 100

Data Sheets 2.00 for first set
.75 each for next 14 sets
.25 each additional set if sent to one address

Electric Water Systems Council

"Case of the Missing Heat" 16.00 per 1000 (minimum order)

"Produce More Food." Leaflet 34.50 per 1000 (minimum order)

	Members	Non-Members
Electrical Living		
EM-2—"Dreams Come True When You Live Electrically"	**5.00 per 100 copies (minimum order—100)**	
Home Service		
EM-5—Electric Roaster (minimum order—100)	9.00 per C—10% extra non-members.	
"Carefree Cooking Electrically"	14.00 per 100 (minimum order—100)	
R-4—"Make Home Economics Your Profession"	**7.00 per 100 (minimum order—100)**	
R-14—"Patterns for Parties"	10.00 per 100 (minimum order—100)	
EM-1—"Appliance Demonstrations"	2.50 per 50 copies (minimum order—50)	
EM-3—"Open the Door to Modern Homemaking Education"	**7.00 per 100 copies**	
Water Heating		
EM-4—"Go Electric When You Need Hot Water"	4.00 per 100 copies (minimum order—100)	
Wiring Booklets		
M-S—"Handbook of Farmstead Wiring Design"	**.40**	**.40**
Quantity prices upon request.		
M-7—"Handbook of Residential Wiring Design"	**.25**	**.25**
Quantity prices upon request.		

Miscellaneous Publications

53-6—Area Development Suggestions, #3, 1953	.30	.75
53-4—Bibliography of Heat Pump, Through 1951	1.00	1.00
52-17—Area Development Suggestions, Number 2	.15	.40
52-16—12th Electric Power Survey, 1952	.50	.50
52-15—"I Want to Know About the Electric Industry"—1952-1953 Edition	2 to 99 copies 25¢ each	
Quantity prices upon request.		
52-12—Area Development Suggestions #1, 1952	.40	1.00
52-4—EEI Pocketbook of Electric Industry Statistics, 1952	Single copies .50	
Quantity prices upon request.		
52-3—Report of the Industrial Development Subcommittee of EEI Rural & Urban Development Committee, 1952	.50	1.25
52-A—Report of Recreation & Travel Development Subcommittee of EEI Rural & Urban Development Committee, 1952	.25	.65
52-B—Report of Civic Development Subcommittee of EEI Rural & Urban Development Committee, 1952.	.25	.65
51-18—Specifications for Impregnated Paper Insulated Cable, High Pressure Pipe Type—1st Edition, AEIC, 1951	Single Copy 1.00	
10 or more .85		
51-4 — Specifications for Impregnated-Paper Insulated Lead-Covered Cable Oil-Filled Type, AEIC, 1951	Single copy 1.00	
10 or more .85		
50-14—"Protection of Electric Service from Sabotage and Enemy Action," 1950	Single copies 20	
Quantity prices upon request.		
50-7—Specifications for Alternating-Current Power Circuit Breakers (2nd Edition), AEIC, 1950	.60	.60
50-6—Principles for Sound Water Resources Development, 1950	21.00 per thousand	
3.00 per hundred		
R-17—Specifications for Impregnated Paper-Insulated, Lead-Covered Cable, "Solid" Type (8th Edition) AEIC, 1949	1.00	1.00
R-12—Electrical Metermen's Handbook—6th Edition—1950	Single copy 3.30,	4.90
Quantity prices upon request.		
O-11—Suggested Field Test Procedure for Determination of Co-efficient of Performance Factor of an Electric Heat Pump While Operating on Heating Cycle, 1948	.25	.25
Q-5—Specifications for Impregnated Paper-Insulated Lead Covered Cable, "Low Pressure, Gas-Filled" Type—AEIC 1948	Single copies 1.00	
10 or more " .85		
Objective Type Rates, 1933-1936	.80	2.00
Rate Book for 1952-53	20.00	30.00
Weekly, Monthly and Annual Statistics	2.00	2.00
(Includes Annual Statistical Bulletin; Weekly Electric Power Output; Monthly Electrical Research Statistics)		

Periodicals

Better Light—Better Sight News (6 issues yearly)	1.00	1.00
Edison Electric Institute Bulletin (Monthly)	2.00	2.00
Farm Electrification (a bi-monthly publication) Up to 10 copies	Free	
Over 10 copies	.75	1.00
Quantity prices upon request.		
Home Service Exchange Yearly subscription	1.00	1.50
One free copy to members upon request.		

Sales Conference

(*Continued from page* 146)

power companies to intensify their industrial sales efforts. He was followed on the program by Frank E. Wiatt, The Cincinnati Gas & Electric Co., who stated that the companies must not only satisfy the present needs of the customers but must also anticipate the needs before the customer realizes the need exists. Don Russell, Factory Stores, Inc., pointed out that in-plant feeding results in greater output per worker and lower accident records, and D. C. Hooper, Westinghouse Electric Corp., presented a complete forecast of the use of electrical energy by industries, stressing the fact that electric companies and manufacturers should turn their sales efforts to those industries which use a small amount of electric energy per man-hour.

The opening speaker of the afternoon session, George E. Duerr, West Penn Power Co., related his company's experience in mass selling. He stated that mass selling methods aid in reducing sales costs by shortening the time required to make a sale. The Edwin L. Wiegand Co. presented a film depicting the advantages of electric heat for industry. H. Carl Bauman, Chemical Construction Corp., declared that trends in the chemical industry show that more power is purchased than is generated, and the final speaker of the day, S. L. Drumm, New Orleans Public Service Inc., urged electric companies to stress money-making possibilities rather than security when seeking industrial sales personnel.

In his opening remarks R. J. Miller, Chairman of the Residential Section, stressed the importance of aggressive selling in the present economy. George R. Byington, Wisconsin Power and Light Co., discussed and demonstrated a low-cost portable display, developed by his company to sell residential lighting, which illustrated the recommendations in General Electric Lighting Recipes. A report on the progress of the Health Home Council by E. O. George, The Detroit Edison Co., was followed by Mrs. Harriet G. West, Indianapolis Power & Light Co., who described a new electric cooking instruction booklet, "New Cook's Cook Book," produced by the EEI Home Service Committee. The next speaker, Arthur S. Goldman, House and Home Magazine, explained how the open-end mortgage can be used to finance the installation of new appliances and rewiring. A report by the Electric Water Heating Committee was followed by Spencer S. Meilstrup, Cleveland Branch, Frigidaire Sales Corp., who stressed the importance of good retail salesmen and pointed out that the only way in which they can be developed is through well-planned and well-conducted sales training.

The afternoon session was opened by a panel discussion moderated by M. R. Norton, Wisconsin Power and Light Co., with panel members G. W. H. Allen, The Dayton Power and Light Co., W. S. Bascom, Union Electric Co. of Missouri, T. B. Smiley, Carolina Power & Light Co., and P. E. Thomas, Rochester Gas and Electric Corp. The panel discussed the operation and effectiveness of the regional Dealer Coordination Workshops, sponsored by the EEI Dealer Coordination Committee for the past two years. The next speaker, Harold P. Bull, Bendix Home Appliances, stressed the importance of selling electrical living as a package rather than selling individual appliances, stating that a well-organized program will help the companies take advantage of the opportunities to build residential load.

H. H. Brenan, Pennsylvania Power & Light Co., told of the electric range promotion planned for the months of April and May in which both NEMA and EEI are participating. George W. Tasker, Cunningham and Walsh, Inc., then described the survey his agency conducted on the effects of television in the home, and declared that surveys such as these could be most helpful to the utilities in their planning. The session was concluded by a panel of editors from trade and consumer publications, who gave their viewpoints on the selling and promotional activities of the industry. Those participating included Frank R. Innes, *Electrical World,* Moderator; W. J. Ridout, Jr., *Electricity on the Farm;* Miss Bernice Strawn, *Woman's Home Companion;* Mrs. Elizabeth Sweeney Herbert, *McCall's Magazine;* Laurence Wray, *Electrical Merchandising.*

Today and Tomorrow in Our Industry

(*Continued from page* 154)

wonderful opportunity in 1954 to remember all that has made electric service what it is and to carry the story to everyone who benefits by it.

Next year, the electrical industry will celebrate the Diamond Jubilee of Light. Three-quarters of a century earlier, Thomas A. Edison developed the first practical incandescent lamp. His work opened the door of the electrical era and lighted the way to the wonders of today and tomorrow.

Programs and materials are being planned, under Edison Electric Institute auspices, to help local electric companies participate in Light's Diamond Jubilee. Other segments of the electrical industry are also planning Jubilee activities, and, with the close cooperation of all concerned, the entire industry should benefit. After the middle of this year, preparations are expected to be well enough advanced so that electric companies and other groups can fit Jubilee programs and materials advantageously into their plans for 1954.

The miracle that began in 1879 has grown to encompass the world and has been wrought by many minds and hands. In looking back upon it, we do not do so in complacency—we gain inspiration from what has been done to accomplish what there is to do. On our endeavors now will be built the dazzling glory of the electrical age to come.

The Industrial Market

(*Continued from page* 160)

In addition, the use of more and better sales tools can for all practical purposes increase the size of our sales force. For example, local market development surveys and business forecasts can lead the salesman to the most productive selling areas. Mass selling methods increase his return once he gets there. Much more can be done to bring about cooperative sales programs for the industry which can be participated in by all factors in the industry—utilities, manufacturers, distributors, and contractors. Constructive local plans and programs can be very effective.

The job ahead is not an easy one, but unless we do it, and do it well, too much of the excellent market potential which we have reviewed will remain just that—potential.

Personals

MR. MCCLURE

MR. MURRAY

Donald C. McClure, President, Central Illinois Electric and Gas Co., has been named Chairman of the Board. Succeeding him as President is **James E. Murray,** Vice President and Treasurer. **Hubert E. Braunig,** Vice President in Charge of Operations, has been promoted to Executive Vice President, and **Leroy W. Esten,** Director of Personnel and Customer Relations, will be Treasurer.

Mr. McClure, Mr. Murray, and Mr. Braunig became associated with the company in 1933, while Mr. Esten joined Centrol Illinois Electric and Gas 12 years ago.

James B. Black, President, Pacific Gas and Electric Co., has been named a consultant to the National Security Council, formed after World War II to coordinate the nation's diplomatic and military foreign policies.

The council, which is President Eisenhower's top cold-war strategy group, is composed of the President, Vice President, Secretaries of State and Defense, Mutual Security Director, and Chairman of the National Security Resources Board. Mr. Black is one of seven civilians representing business, education, and labor who were recently appointed by the White House to advise the council on specialized matters.

Harry M. Miller, Executive Vice President, Columbus & Southern Ohio Electric Co., has been elected a Director to fill a new place on the board, the size of which has been increased. Mr. Miller was named a vice president in 1951 and executive vice president last year.

Vincent S. Madison, former Power Sales Engineer, The Detroit Edison Co., has been named Director of the company's newly established Area Development Division. Mr. Madison joined the company in 1936 following his graduation from Columbia University. For the past two years he has been on leave from the company while he served as a consultant with the Mutual Security Administration's Power Branch.

Robert G. Ely, Vice President, The Connecticut Light & Power Co., has been elected Chairman of the New England Council Farm Electric Service Committee. Other new committee officers are Vice Chairman, **Frank R. Bailey,** Director, Farm Service Division, Central Maine Power Co., and Secretary, **Francis E. Robinson,** Manager, Agriculture Department, New England Council.

The Economic Outlook

(*Continued from page* 162)

of major commodities both domestically and abroad.

3. The level of corporate profits improved moderately in the fourth quarter, and further improvement is indicated for the first quarter. Nevertheless, at current tax rates and current levels of dividend payments, plans for capital outlays in 1953 still suggest the need for heavy recourse to securities markets. If present plans for plant and equipment outlays materialize, 1953 will be the third consecutive year in which internal sources will have provided substantially less funds than were required for expansion of fixed assets.

4. The resumption of truce negotiations in Korea, apart from any long-term effect it may have on defense expenditures, poses the possibility that a number of hard-goods industries may enter on a gradual inventory liquidation. Inventory-sales ratios are now apparently in very satisfactory balance almost throughout business, but both inventories and sales are running at extremely high levels, and a downward shift in sales expectations may serve as an incentive for considerable liquidation.

5. Finally, the strongest case for caution about the position of business at year-end stems from the possible concurrence of three downward trends: in capital goods demands, in defense procurement, and perhaps in consumer durables demand if the advance of debt begins to slow. This remains an unlikely but not impossible concurrence; and the possibility points to the need for continuing caution in viewing the outlook for late in the year.

All of these cautions rest largely on the fact that defense itself no longer provides the strong expansionary atmosphere that it once did. Nevertheless, the great majority of available measures indicate that private business has regained the balance it lost in early 1951, and is in far better shape to withstand the test that might be imposed by the diminishing importance of defense expenditures.

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